TOWN OF MEDLEY

NW South River Drive Corridor Study Area Expansion

HEFT/ SR-25 (Okeechobee Road) to NW 121st Way (Medley West Industrial Area)

Volume I: Engineering Analysis (Master Plan)

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Purpose of Study:

The purpose of the NW South River Drive Corridor Area Expansion Study is to investigate the transportation characteristics/deficiencies associated with the Town of Medley's western most industrial area i.e. the NW South River Drive Area Expansion (a.k.a Medley West Industrial Area) and its interaction with SR-25 (Okeechobee Road) and NW South River Drive. This study provides the Town of Medley and the Miami-Dade County Metropolitan Planning Organization (MPO) with documented information on the existing traffic conditions within the Medley West Industrial Area; identifies the impacts that planned future developments have on the roadway network and makes recommendations for improvements within the study area.

Background:

The Medley West Industrial Area forms a triangular wedge bounded on the north by SR-25 (Okeechobee Road) on the west by the Florida Turnpike; to the south by NW 122nd Street/Way and to the east by NW 121st Way. **This 426 acre industrial area is developing rapidly with approximately 80% (410 acres) of the area anticipated to be built out by 2008 and the remainder by 2018.**

This industrial area which provides employment for a large segment of the county (40,000 people work in the area) has three major access points connecting this area to the remainder of the Town and adjacent communities. The two primary access points are located along SR-25 (Okeechobee Road) at NW 138th Street and NW 107th Avenue respectively. These access points are currently limited by sub-standard bridge widths. Both of these connections are signalized and lead outside of the Town limits providing access to other areas of Miami-Dade County via SR-25 (Okeechobee Road). The other major access point is the intersection of NW 122nd Way and NW South River Drive on the eastern limits of this industrial area. It is also a signalized intersection. At this point the Medley West Industrial Area has access to the remainder of the Town of Medley via the NW South River Drive. **NW South River Drive is the most important and highly utilized transportation corridor in the Town of Medley. Due to the industrial nature of the Town, a large percentage of the traffic is comprised of large tractor trailer trucks. The presence of these larger vehicles in the traffic stream significantly affects the capacity and long term maintenance of the road network within the study area**.

In December 2003, the Town of Medley completed the NW South River Drive Corridor Study which was prepared by Corzo Castella Carballo Thompson Salman, P.A. This previous study identified various improvements required to enhance mobility along NW South River Drive and access to the industrial areas within the Town of Medley east of NW 107th Avenue. **This second phase of the study will address the traffic circulation issues for the Medley West Industrial Area and identifies drastically needed improvements to its roadway network as a second step in addressing future**

expansion along NW South River Drive as well as improved access to SR-25 (Okeechobee Rd.) and the Town's transportation needs.

Study Results:

The traffic analysis conducted for the master plan included a review of the various intersections and arterial levels of service within the study area for existing year (2005), opening year (2008), interim year (2018) and design year (2028). The intersection level of service (LOS) analysis revealed that due to the anticipated considerable increase in traffic volume by the opening year of 2008, the two primary access points will operate at LOS D or worse. By the design year 2028, a majority of the intersections will operate at unacceptable LOS E or worse. Likewise, the arterial level of service performed revealed that several of the roadway corridors are already at capacity. NW 107th Avenue and NW 138th Street which provide access into the project area will be operating at unacceptable LOS E or worse. The NW South River Drive arterial segment within the project limits is also expected to operate at unacceptable LOS E or worse during the analysis period.

Additionally, the current geometric configuration of the area's intersections is not adequate to handle the wide turns of a semi-trailer truck which constitutes the majority of the traffic within the industrial area. The turning radii of most of the intersections are relatively small which inhibits the ability of trucks to make a safe turn. Turning trucks usually encroach on the opposing lane which creates serious safety concerns for the approaching vehicles. It is essential to provide wider radius returns at the intersection corners, with no less than a 50-ft radius to accommodate WB-50 vehicles. In short, the study shows that the intersections within the Medley West Industrial Area roadway network are not able to handle the wide turns of the WB-50.

Recommendations:

Based on the review of the analysis results as well as anticipated traffic impacts and access needs for the Medley West Industrial Area various recommendations were developed to alleviate the transportation deficiencies identified. However, due to right-of-way constraints and the availability of funding, a phasing plan for the implementation of the improvements is recommended as follows.

- ✓ **Immediate Needs**
  - Contact Miami-Dade County Public Works Department and have them modify their bridge design on NW 138th Street (5-lane) to accommodate future needs. This structure needs to be constructed at a higher elevation than currently planned to accommodate future widening needs or widened now to meet future needs. Traffic lanes exiting the town should consist of a dual left

and a shared through right. In the future a separate right turn lane exiting the town would be necessary along the bridge. See 2018 recommendations.

- The traffic signal at NW 107th Avenue and SR-25 (Okeechobee Road) (currently temporarily permitted) meets signal warrants 1, 2, 3 and 6. It will need to remain beyond the construction period of the current Miami-Dade Public Works project along NW 138th street. It will need to be upgraded to meet permanent signalization requirements.
- Confirm the availability of road right of way within the Medley West Industrial Area. Develop base maps, obtain title information and refine right of way needs for implementation of proposed improvements.
- Develop roadway plans and obtain permits required to allow for implementation of the 2008 improvements.
- Commence planning for the implementation of the 2018 and 2028 improvements including supporting Miami-Dade County and FDOT plans for improvements to the area roadways, as well as the implementation of the NW South River Drive Corridor Study requirements.

✓ **Phase I (2008):**

- Construct a 5-lane bridge section over the Miami Canal on NW 107th Avenue.
- Construct a 3-lane section for NW 138th Street from NW 113th Avenue Road to the FEC Railroad.
- Construct a 4-lane section along NW 107th Avenue from SR-25 (Okeechobee Road) to NW 127th Street.
- Convert the intersections of NW 113th Avenue Road with NW 138th Street and NW 127th Street and NW 107th avenue to 4-way stop control.
- Provide dual left turn lanes on the southeast bound approach at SR-25 (Okeechobee Road) and NW 138th Street Intersection.
- Synchronize the traffic signals along SR-25 (Okeechobee Road), at NW 138th Street and NW 107th Avenue.

✓ **Phase II (2018):**

- Construct a 3-Lane section for NW South River Dr. from NW 127th Street to NW 121st Way. Assumes that this connects to the 3-lane section constructed under the recommendations outlined in the first study for NW South River Drive.
- Widen the bridge at NW 138th Street and SR-25 (Okeechobee Road) intersection from a 5-lane section to a 6-lane section to enable the addition of an exclusive right turn lane on the northeast bound approach.

- Widen the bridge at the NW 121st Way and SR-25 (Okeechobee Road) intersection from a 4-lane section to a 5-lane section to enable the addition of an additional left turn lane on the northeast bound approach.
- Provide channelization of the right turn lane on the southwest bound approach at SR-25 (Okeechobee Road) and NW 138th Street Intersection.

✓ **Phase III (2028):**

- Expand NW 138th Street to a 4-lane section from NW 113th Avenue Road to the FEC Railroad
- Widen NW South River Drive to a 4-Lane section from NW 107th Avenue to NW 121st Way. This is consistent with the previous study.
- Provide traffic signals at NW 113th Avenue Road with NW 138th Street and NW 127th Street with NW 107th Avenue intersections.
- Support FDOT efforts to provide a Grade separation of SR-25 (Okeechobee Road) over NW 138th street. The difference from the FDOT Action plan is elevating all the through lanes on SR-25 (Okeechobee Road) through the use of a SPUI – Single Point Urban Interchange. This configuration allows for through movements and turning movements for NW 138th Street to occur beneath the structure thus accommodating more signal green time for these movements. The SR-25 Okeechobee Road through lanes would move traffic continuously above NW 138th Street. Access ramps would be provided on either side of SR-25 Okeechobee Road (similar to an interchange) to provide access to and from NW 138th Street onto SR-25 Okeechobee Road.

These recommended improvements and benefits are based on the assumption that the signals along SR-25 (Okeechobee Rd.) and those within the town boundaries will be properly synchronized by the Miami-Dade County Public Works Department Traffic Control Center. Furthermore the existing restriction of certain truck turning movements at the intersections with connections to SR-25 (Okeechobee Road) needs to be immediately addressed. The existing narrow turning radii combined with the large WB-40 and WB-50 trucks turning at the short bridge crossings also leads to extensive vehicular queues. The provision of four (4) lanes along the following arterials: NW 107th Avenue, NW 138th Street and NW South River Drive would dramatically increase the capacity and operation of these facilities as well as that of the intersections within the study area. In addition, future signalization coordination of NW 113th Avenue Road with NW 138th Street and NW 127th Street with NW 107th avenue intersections will greatly improve traffic flow and operations within the study area.

Estimate of Construction Costs:

Based on the recommendations and the planned phasing of the improvements, two construction activities were identified for immediate implementation (widening to both sides) on the road network within the Medley West Industrial Area.

1. Road widening from 2-lane section to 3-lane section
2. Reconstruction from 2 lane-section to 4-lane section

Both activities involve improvements to the intersections along the affected roadway segments. The intersection geometric improvements consist predominantly of flaring the intersection corners to allow wider right turns of the design vehicle. The Costs for the roadway construction activities are based on FDOT standard base costs (obtained from the Long Range Estimate unit costs 2000). To obtain the present year (2005) costs, these unit prices were escalated by 30% to account for inflation experienced in recent construction costs. The unit prices for the bridge construction and widening were obtained from the 2004 Transportation Costs published by the FDOT Office of Policy Planning.

The total transportation improvement needs for the Medley West industrial Area is estimated at **$26,098,249.** The right-of-way component of this cost is approximately **$1,137,250.** The Table below shows a breakdown of the needs assessment

NEEDS ASSESSMENT SUMMARY						
Activity		**Road Links**	**Opening Year 2008**	**Interim Year 2018**	**Design Year 2028**	**Total Cost**
Roadway	Reconstruction (2 to 4 Lanes)	NW 138th St. from NW 113th Ave to Okeechobee Rd.	$580,282	-	-	**$3,799,653**
		NW 107th Ave. from NW 127th St. to Okeechobee Rd.	$478,226	-	-	
		NW South River Drive	-	-	$1,993,560	
		NW 138th St. from NW 113th Ave FEC Railroad.	-	-	$747,585	
	Widening (2 to 3 Lanes)	NW 138th St. from NW 113th Ave FEC Railroad.	$607,327	-	-	**$3,349,163**
		NW 127th Street east of NW 107th Avenue	$255,217	-	-	
		NW South River Drive	-	$1,528,548	-	
		NW 122nd Way	-	-	$958,070	
	Signalization	Intersections of NW 138th St. & NW 113th Ave. and NW 107th Ave. & NW 127th St.	-	-	$294,580	**$294,580**
Bridge	Reconstruction	Bridge over Miami Canal at NW 138th Street	$1,764,000	-	-	**$1,764,000**
	Widening	Bridge over Miami Canal at NW 107th Ave.	$594,000	-	-	**$1,146,959**
		Bridge over Miami Canal at NW 138th St.	-	$300,365	-	
		Bridge over Miami Canal at NW 107th Ave.	-	$252,595	-	
Sub Total #1			**$4,279,052**	**$2,081,508**	**$3,993,795**	**$10,354,355**
Mobilization (15%) and MOT (15%)			$1,283,716	$624,452	$1,198,138	$3,106,306
R/W Costs			$633,500	$481,250	$22,500	$1,137,250
Sub Total #2			**$6,196,268**	**$3,187,210**	**$5,214,433**	**$14,597,911**
Engineering Design/ Inspection / R/W Support (15%)			$929,440	$478,081	$782,165	$2,189,687
Total Cost (2005 Dollars)			**$7,125,708**	**$3,665,291**	**$5,996,598**	**$16,787,597**
Total Cost (Adjusted for future years)*			**$7,854,689**	**$5,590,011**	**$12,653,549**	**$26,098,249**

*The inflation adjustment factor is based on the FDOT 2004 Transportation costs price trend index table

1.0 INTRODUCTION

The purpose of the NW South River Drive Corridor Area Expansion Study is to investigate the transportation characteristics/deficiencies associated with the Town of Medley's western most industrial area and its interaction with SR-25 (Okeechobee Road) and NW South River Drive. The NW South River Drive Area Expansion is also known as "Medley West Industrial Area". This area forms a triangular wedge bounded on the north by SR-25 (Okeechobee Road) on the west by the Florida Turnpike; to the south by NW 122nd Street/Way and to the east by NW 121st Way. **This 426 acre industrial area is developing rapidly with approximately 80% (410 acres) of the area anticipated to be built out by 2008 and the remainder by 2018.**

This industrial area has three major access points connecting this area to the remainder of the Town and adjacent communities. The two primary access points are located along SR-25 (Okeechobee Road) at NW 138th Street and NW 107th Avenue respectively. Both of these connections are signalized and lead outside of the Town limits providing access to other areas of Miami-Dade County via SR-25 (Okeechobee Road). The other major access point is the intersection of NW 122nd Way and NW South River Drive on the eastern limits of this industrial area. It is also a signalized intersection. At this point the Medley West Industrial Area has access to the remainder of the Town of Medley via the NW South River Drive corridor studied under the Miami-Dade Metropolitan Planning Organization (MPO) Study titled: "NW South River Drive Corridor Study" prepared by **Corzo Castella Carballo Thompson Salman, P.A.** dated December 2003.

NW South River Drive is one of the most important and highly utilized transportation corridors in the Town of Medley. This corridor began as a two-lane service road to the adjacent parallel facility of SR-25 (Okeechobee Road). As the Town developed and industry expanded, more and more traffic was funneled into the Town. In response, NW South River Drive was transformed from a service road to a major collector road carrying a significant volume of traffic. Because of the industrial nature of the Town, a large percentage of the traffic is comprised of large tractor trailer trucks. The presence of these larger vehicles in the traffic stream significantly affects the capacity and long term maintenance of the corridor. The lack of alternative corridors in the Town's roadway grid network and the current severity and duration of the traffic congestion along this facility significantly impacts the movement of goods and services into and out of the Town. The "NW South River Drive Corridor Study" identified various improvements required to enhance mobility along NW South River Drive and access to the industrial areas within the Town of Medley east of NW 107th Avenue. This second phase of the study will address the traffic circulation issues for the Medley West Industrial Area and identify drastically needed improvements to its roadway network as a second step in addressing future expansion along NW South River Drive as well as improved access to SR-25 (Okeechobee Rd.) and the Town's transportation needs.

1.1 Purpose of Study

The purpose of this study is to provide the Town of Medley and the Miami-Dade County Metropolitan Planning Organization (MPO) with documented information on the existing conditions within the NW South River Drive Area Expansion (a.k.a Medley West Industrial Area) and its interaction with SR-25 (Okeechobee Rd.) and NW South River Drive and the need for improvements in this area. The "NW South River Drive Corridor Study" identified the need to consider planned developments in the "Pennsuco" area (the recently annexed portion of Medley) and in the proposed new annexation areas. The previous study mentioned indicated that the roadway network in these areas should be investigated to determine the impact that future developments will have on NW South River Drive.

1.2 Project Area Description and Background Information

The Town of Medley is located in the northern center of Miami-Dade County, Florida. It is bordered directly by the Town of Hialeah Gardens on the northwest, by the City of Hialeah on the northeast and by the City of Miami Springs on the southeast. Unincorporated Miami-Dade County and the City of Doral lie predominantly to the south and west. The Town of Medley occupies a triangular shaped area approximately 3845 acres in area. Its northern boundary is delineated by NW South River Drive east of NW 107th Avenue and SR-25 (Okeechobee Road) west of NW 107th Avenue. The Town recently annexed 468 acres of land consisting of the triangular shaped area on the northwest portion of the Town and approximately 280 acres within Section 10 Township 53S Range 40E just north of NW 74th Avenue (the latter includes the lake bordered by the future NW 87th Avenue on the west). (See **Appendix A** for a Map reflecting the new Town Limits). According to the Town's Comprehensive Plan (1994-2000) the existing land use in Medley is primarily industrial in nature with 75% of the total area attributed to this end and 1% of the land is for residential uses. According to the 2000 Census, 1098 individuals call Medley their home, however, it is estimated that upwards of 40,000 commuters travel to work in Medley daily. This work force serves a large industrial community whose goods and services are transported to businesses in and out of the Town of Medley and Miami-Dade County. The Town has experienced an increase in commercial and industrial growth which will be compounded by the recent annexation and planned commercial and industrial developments. A substantial number of new jobs will be created which will directly translate to an increase in industrial and commuter traffic.

This new annexation area has been identified as the NW South River Drive Area Expansion and is also known as "Medley West Industrial Area". This area which is the focus of this Master Plan Study forms a triangular wedge bound on the north by SR-25 (Okeechobee Road) on the west by the Florida Turnpike to the south by NW 122nd Street and to the east by NW South River Drive. It is actually located in Township 52S, Range 40E, Sections 29 and 30. **Exhibit 1-1** reflects a location map of the project area.

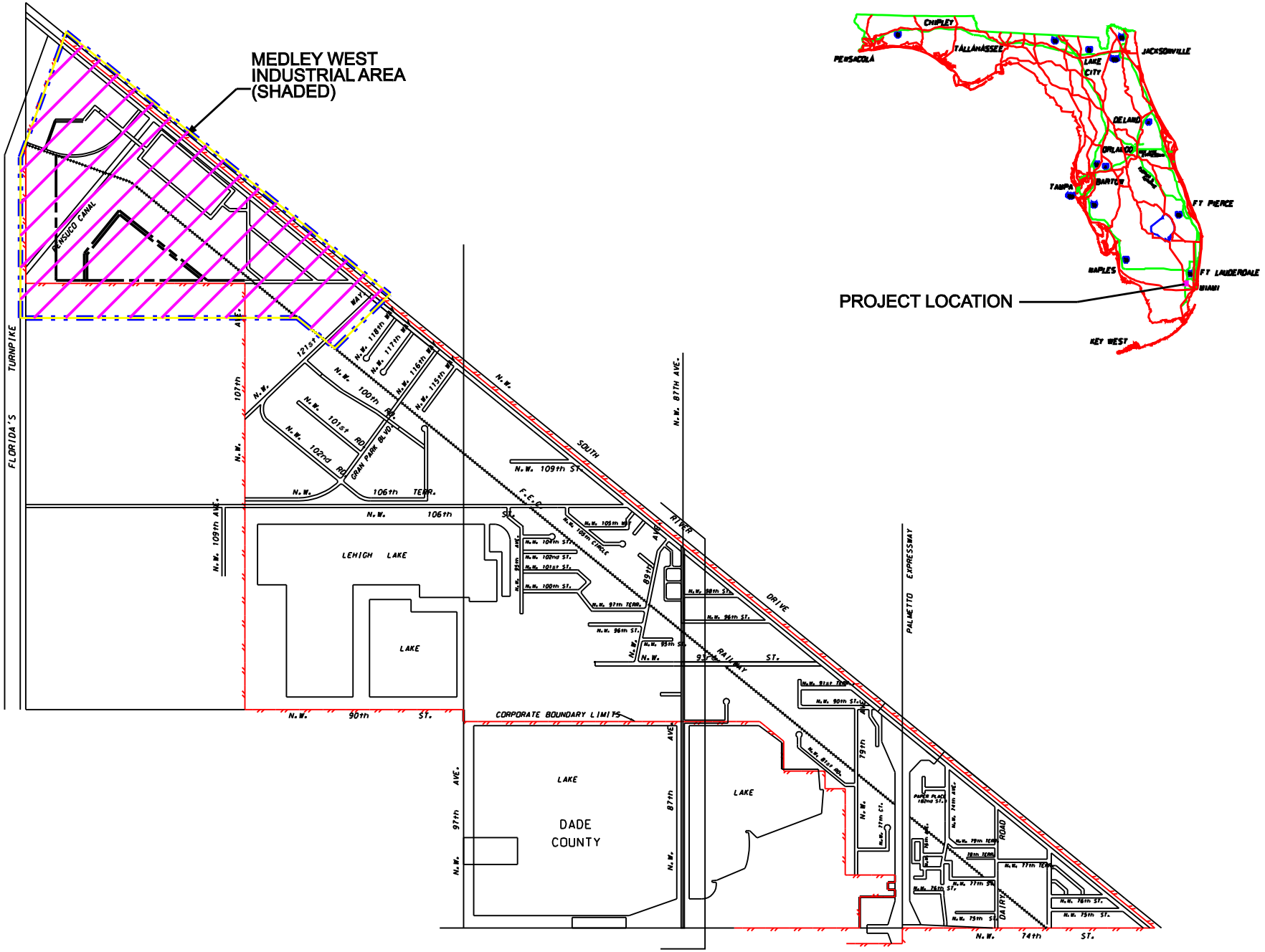


EXHIBIT 1-1

Project Location Map

This area is connected to NW South River Drive to the east which runs parallel to the Miami River and SR-25 (Okeechobee Road) to the north. NW South River Drive receives the bulk of the traffic in Medley and will continue to serve as the primary corridor for the annexation area to access the remainder of the Town. This is due in part to the lack of east-west connectors within the Town limits coupled with alternate roadways to enter and exit Medley and mostly due to the proximity of SR-25 (Okeechobee Road) and the access that it provides from the surrounding cities and major roadways into and out of Medley. SR-25 (Okeechobee Road) serves as a major point of access into the Town of Medley from two perspectives. First and foremost, it functions primarily as a commercial and industrial route for the tri-county area extending as far back as Central Florida and points northward. From a local standpoint, SR-25 (Okeechobee Road) provides direct access into the Town of Medley via a number of bridge crossings over the Miami Canal.

The following bridges provide that access to the Medley West Industrial Area:

- ✓ NW 138th Street
- ✓ NW 107th Avenue
- ✓ NW 121st Way (via NW South rive Drive)

The Florida Department of Transportation recently completed a planning study known as SR-25 Okeechobee Road Final Action Plan dated July 2004 and prepared by Kimley-Horn and Associates, Inc. This study addressed proposed future improvements to SR-25 (Okeechobee Rd.), but did not address the Town of Medley access needs or the Town's expansion plan on Medley access points to SR-25 (Okeechobee Rd).

Access to SR-25 (Okeechobee Rd.) is critical for the Medley West Industrial Area given that SR-25 (Okeechobee Rd) provides direct access to the Homestead Extension of the Florida Turnpike and SR-826 (Palmetto Expressway). From the two limited access facilities, goods and services flow in and out of Medley reaching several communities throughout and outside of Miami-Dade County.

The Homestead Extension of the Florida Turnpike (HEFT) also plays an important part in the severe traffic congestion within the Town of Medley. In addition to the ongoing expansion of the HEFT, a new interchange was constructed at NW 106th Street that provides direct access into Medley. This adds a second point of entry and exit to the already existing indirect access from the SR-25 (Okeechobee Road) connection. NW 106th Street is a four lane divided road from the Turnpike to where it merges with NW 116 Way. From here, NW 116 way continues as a four lane divided corridor to NW South River Drive, across the Miami Canal and into Hialeah Gardens. NW 106th Street becomes a two lane road that terminates at the intersection with NW South River Drive just east of NW 121st Way. Recommended and drastically needed improvements to the Medley system east of NW 121st Way were discussed in the "NW South River Drive Corridor Study" report previously mentioned.

The Florida Turnpike Enterprise, in coordination with FDOT District 6, is currently developing a new interchange with the proposed extension along NW 74th Street. This

will provide improved access to the Town to the south, but will not significantly alleviate the traffic congestion within the study area. Miami-Dade County Public Works is currently developing a study to look at improvements along NW 107th Avenue from NW 138th Street to NW 106th street. A new connection along the corridor would significantly impact North-South movements through the Town and improve access to the Medley West Industrial area. The Town supports improvements that will result in better mobility within its boundaries. Although beyond the scope of this current study, the detailed information within this Master Plan can assist the Miami-Dade County Public works Department with data needed for the development of a new North-South through corridor. (NW 107th Avenue).

State Road 836, State Road 112 and State Road 9 (I-95) also serve as vital links from the surrounding areas into and out of Medley. The combination of these major roadways, easily reached from Medley, should allow for quick access to and from Miami International Airport, Opa-Locka Airport and the Port of Miami, but is currently hampered by the severe traffic congestion within the study area. Additionally, the Florida East Coast Railroad Company (FEC) maintains a railroad line running through Medley that serves several of the businesses in the area. This line runs parallel to NW South River Drive. The diagonal orientation of the railroad significantly impacts the roadway grid network within the Town. The FEC Railroad Company has limited the number of at-grade crossings it will allow within the Town. Earlier coordination with FEC revealed that they would permit one new at-grade crossing. This crossing will be provided as part of the NW 87th Avenue project currently being developed by FDOT D-6. Due to developments in the recently annexed northwest quadrant, there is the need for an above grade intersection between NW 122 Street and NW 107th Avenue at the FEC railroad. The construction of such a structure has been designed for the Pan American Companies. Construction of this facility is anticipated by 2008, thus increasing traffic flow onto NW 107th Avenue.

The Town of Medley and Miami-Dade County are in a traffic congestion crisis. The passing of the ½ cent sales tax dedicated solely to funding for transportation improvements speaks volumes of our residents overwhelming desire for action. As can be seen above, the major transportation corridors are either being evaluated for capacity improvements or construction is complete on these expansion projects. With most major roadways reaching or exceeding capacity before improvements can be designed and constructed, a shift to expanding our transit system is occurring. **It is at this time, that improvements to critical corridors that until now have been overlooked be undertaken. NW South River Drive is one such corridor.** Urgently needed improvements to this corridor in conjunction with access improvements to SR-25 (Okeechobee Rd.) will greatly enhance the ability to move traffic and their corresponding goods and services in and out of the Medley West Industrial area; thus providing a vital role in Medley and Miami-Dade County economy. **As the legendary George Allen once stated "The Future is Now!"**

1.3 Project Description and Access Corridor Analysis

The existing roadway network for the Medley West Industrial Area represents an odd assortment of minor and major Urban Collectors with two designated arterials. The most significant arterial is SR-25 (Okeechobee Road) to the north. This State Road is considered a Principal Arterial connecting various counties within Florida with the Town of Medley and the rest of Miami-Dade County. The Medley West Industrial Area connects to SR-25 (Okeechobee Road) through three main connection points. On the western end NW 138th Street which is considered a major Urban Collector provides a primary access point. In the center NW 107th Avenue designated as a Minor Arterial due to future plans to extend it north and south as a County Road Major Arterial and to the east via a connection between NW South River Drive (Considered a minor Urban collector in this area) and NW 121st Way. These major connectors are interconnected via a series of minor collectors which can be seen on **Exhibit 1-2** and include the following roadways.

- ❑ NW 113th Court
- ❑ NW 107th Court
- ❑ NW 115th Avenue
- ❑ NW 122nd Street
- ❑ NW 122nd Way
- ❑ NW 127th Street
- ❑ NW 128th Street
- ❑ NW 131st Street

This network includes four (4) signalized intersections and four (4) non-signalized intersections which will be addressed as part of this traffic report. These are listed on **Table 1.3-A**. The existing intersection geometry and lane configurations are shown in **Exhibit 1-3**.

TABLE 1.3-A
MAJOR STUDY INTERSECTIONS – EXISTING CONFIGURATION

Intersection	Traffic Control Type	Intersection Type	Comments
SR-25 & NW 138th Street	Signalized	4 legs-bridge crossing	See Note 1
SR-25 & NW 107th Avenue	Signalized	4 legs-bridge crossing	
SR-25 & NW 121st Way	Signalized	4 legs-bridge crossing	
NW S. River Dr. & NW 121st Way	Signalized	4 legs - skew	
NW 113th Ct. & NW 138th Street	Stop Controlled	4 legs – Two Way Stop	
NW 127th St. & NW 107th Avenue	Stop Controlled	4 legs - Two Way Stop	
NW 122nd St. & NW 107th Avenue	Stop Controlled	3 legs – Two Way Stop	See Note 2
NW 122nd Way & NW S. River Dr.	Stop Controlled	3 legs – Two-Way Stop	

Notes

1. This intersection is currently scheduled for widening under Miami-Dade Public Works Project No. 2003191. Additional improvements are being done under FDOT Financial project ID 4164233.
2. Pan American Companies/ Town of Medley plans to grade separate this intersection by 2008.

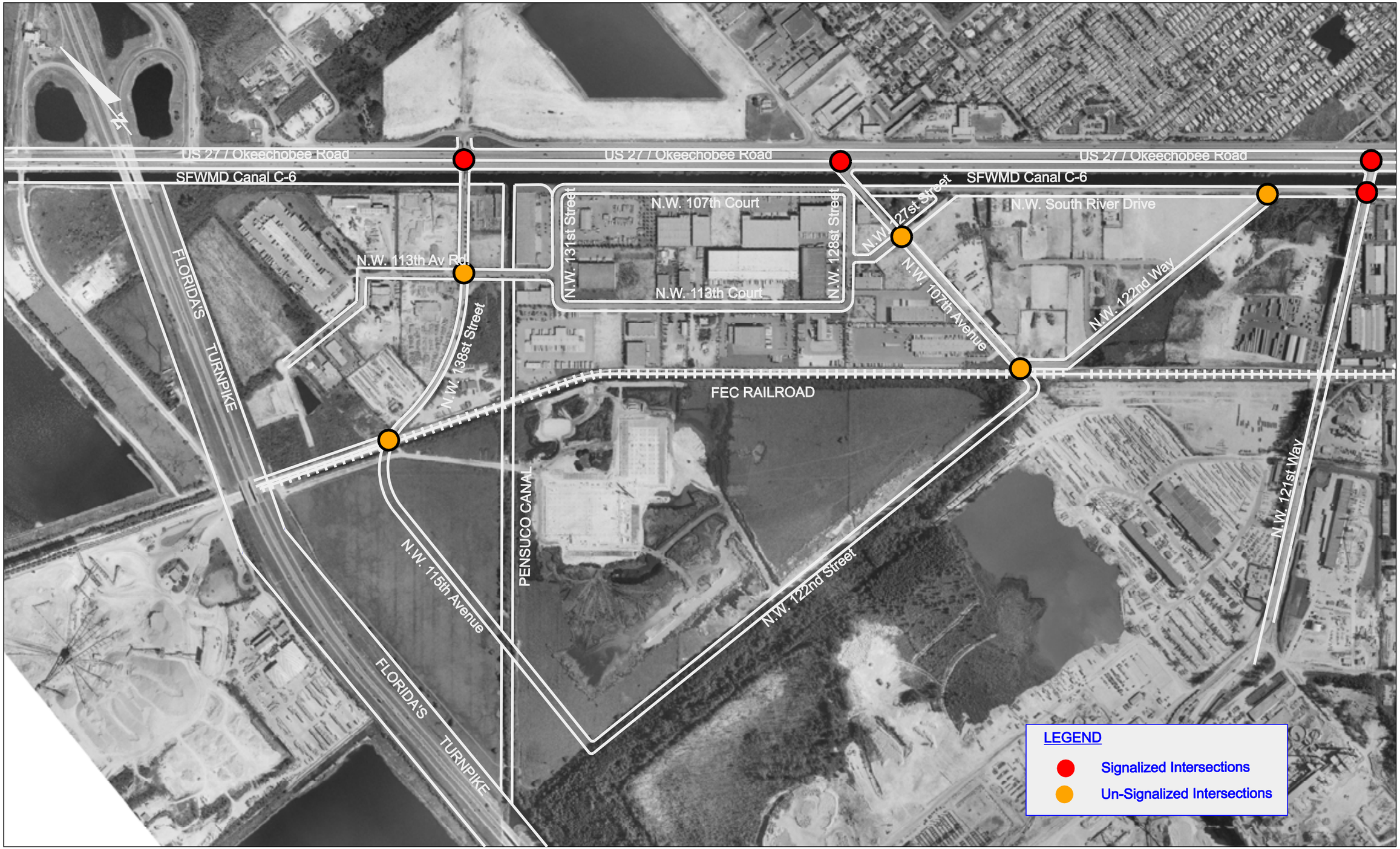
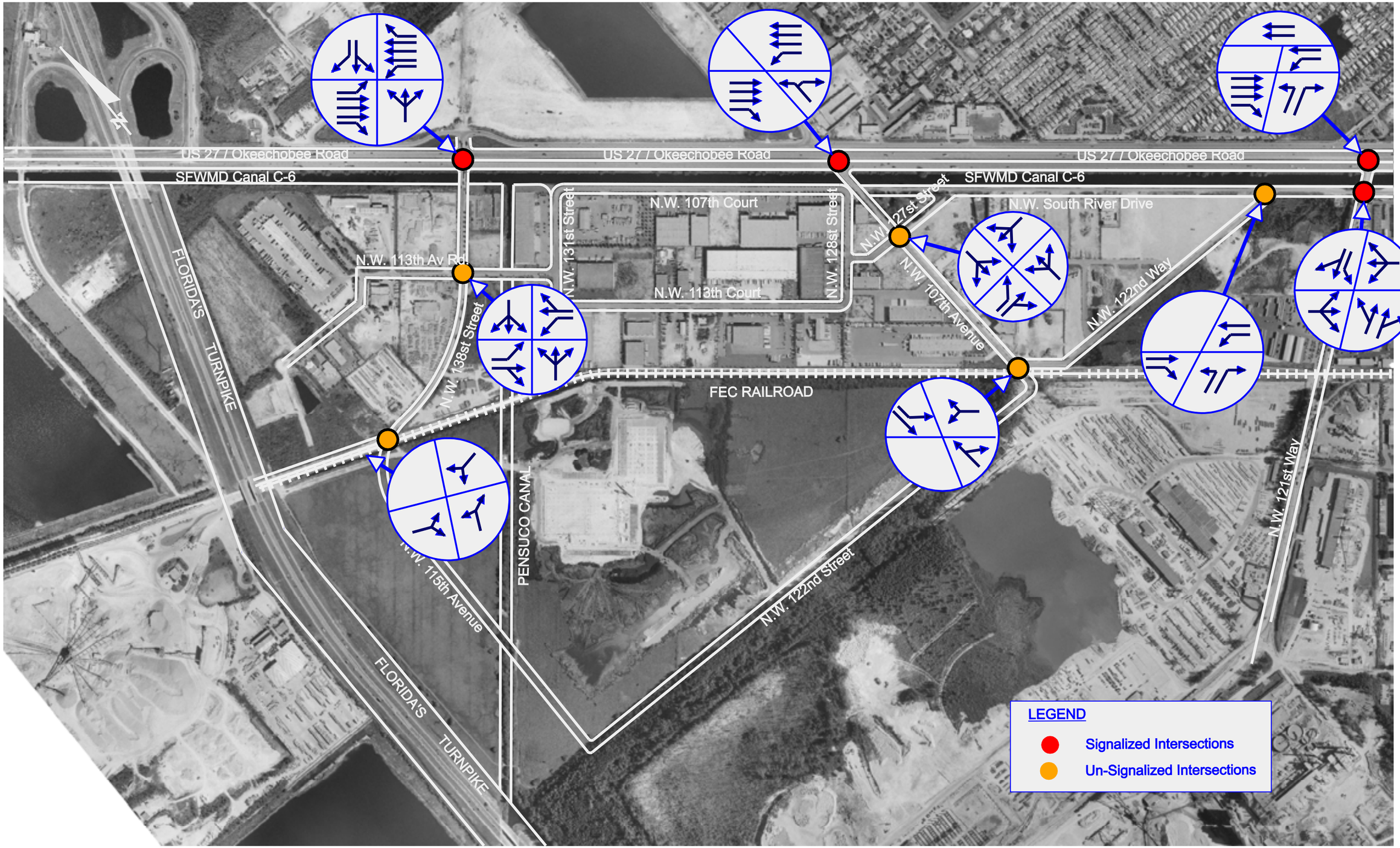


EXHIBIT 1-2
EXISTING ROAD NETWORK



THE TOWN OF MEDLEY FLORIDA

EXHIBIT 1-3

Existing Intersection Geometry & Lane Configuration

2.0 TRAFFIC ANALYSIS

Volume II of this report consists of the detailed traffic analysis and report that was performed for the study area. The traffic study utilized traffic count data collected from the major intersections within the project area and also from recent pertinent projects in the area for the various traffic analyses performed. The performance of the intersections and the roadway links were measured utilizing the Level of Service concept.

Level of Service (LOS) is a measure of the quality of service provided by a transportation facility. It consists of Categories "A" through "F" with LOS "A" representing the most favorable driving conditions and LOS "F" the least favorable. The LOS concept is a way of measuring highway performance. It is used by the Florida Department of Transportation and local governments in their planning efforts to project the future needs of transportation corridors and assist in prioritizing the required improvements. The FDOT has adopted Statewide Minimum Level of Service Standards. Pursuant to these requirements, the minimum acceptable level of service for two lane and multi-lane state roadways (that are not limited access facilities) is LOS "D".

2.1 Intersection Analysis

The LOS analysis was performed on the major intersections described in Section 1.3 and shown below in **Table 2.1-A**. Peak hour turning volumes from the field counts, geometric conditions, and existing signal phasing and timing information were used as input. The signal phasing and timing information used for analysis was obtained from the Miami-Dade County Public Works Department – Signals Division, and the data was supplemented with field measurements in some locations.

Analysis of the existing conditions at the signalized intersections indicates excessive delays for the northeast bound approach at the intersection of NW 138th Street and SR-25 (Okeechobee Road) during the PM peak period. This is due to the relatively high left and through vehicular movements utilizing just a single shared lane. LOS F was also observed for the southeast bound approach at the same intersection due to extremely high left turn vehicular movement utilizing just a single left turn lane. At the NW 107th Avenue and SR-25 (Okeechobee Road) intersection, the northwest approach left-turn movement is currently operating at LOS D due to the relatively high left-turn traffic volume. **This reflects a potential need for improvements in the near future.**

There are four major non-signalized intersections within the study area that were analyzed utilizing the non-signalized intersection procedures included in the 2000 HCM. It was observed that all the non-signalized intersections currently operate at satisfactory LOS B or better with the exception of the service road north of the SR-25 (Okeechobee Road) which currently operates at LOS C or better.

TABLE 2.1-A EXISTING (2005) INTERSECTION LOS		
Intersection	**LOS**	
	AM	**PM**
US 27 / SR-25 (Okeechobee Road) & NW 138th Street	B	D
US 27 / SR-25 (Okeechobee Road) & NW 107th Avenue	B	B
US 27 / SR-25 (Okeechobee Road) & NW 121st Way (*)	B	A
NW 121st Way & NW South River Drive	B	C
NW 138th Street & NW 113rd Av Road	A	A
NW 107th Avenue & NW 127th Street	A	A
NW 138th Street & Service Road (*)	B	C
NW South River Drive & NW 122nd Way	A	A
NW 107th Avenue & NW 122nd Way	A	A

* Intersections not located in the heart of the Medley West Industrial Area but serves part of the traffic that exits the area, heading northbound.

It is standard practice to perform the traffic analysis for the Existing year, Opening Year, Interim Year and the Design Year as follows:

Existing Year: 2005 – the year the study is being conducted
Opening Year: 2008 – it is assumed that the various construction projects will be completed by this date. Additional improvements that should be in place by this date are considered.

Interim Year: 10 years from the opening year (2018)

Design Year: 20 Years from the opening year (2028)

This type of analysis was performed on the above nine intersections assuming no improvements were made to the corridor (No Build Alternative). The 'No-Build Scenario roadway network consists of the existing characteristics plus committed roadway improvements. The results for Years 2008, 2018 and 2028 are presented in **Table 2-1.B** below.

TABLE 2.1-B NO BUILD FUTURE INTERSECTION LOS						
Intersection	LOS					
	2008		2018		2028	
	AM	PM	AM	PM	AM	PM
US 27 / SR-25 (Okeechobee Road) & NW 138th Street	D	D	F	F	F	F
US 27 / SR-25 (Okeechobee Road) & NW 107th Avenue	D	D	F	F	F	F
US 27 / SR-25 (Okeechobee Road) & NW 121st Way	B	A	C	A	D	B
NW 121st Way & NW South River Drive	C	C	C	C	C	D
NW 138th Street & NW 113rd Av Road	A	B	F	F	F	F
NW 107th Avenue & NW 127th Street	A	F	F	F	F	F
NW 138th Street & Service Road	B	B	C	C	E	E
NW South River Drive & NW 122nd Way	B	B	B	B	B	B

This No-build analysis considered that the current proposed FDOT and Miami-Dade County Public Works Department improvements at NW 138th Street and SR-25 (Okeechobee Road) were in place. **The intersection LOS analysis reveals that due to the anticipated considerably increase traffic volume by the opening year of 2008 the two primary access points will operate at LOS D or worse.** LOS E was however observed for northbound movement at the intersection of SR-25 (Okeechobee Road) and NW 107th Avenue during the AM peak period. This can be attributed to the relatively high left and right vehicular movements utilizing just a single shared lane thereby resulting in excessive delays. Also LOS F was observed for the eastbound movement at the intersection of NW 107th Street and NW 127th Street. This can be attributed to the fact that this intersection is a two-way stop controlled intersection with inadequate gaps in the relatively high North-South traffic volume for the left-turn and through east-west bound vehicular movements. Similarly, LOS E and F were also obtained for the southeast bound approach of NW 138th Street and NW 113th Av. Road for the AM and PM peak periods respectively.

By 2018 the intersections of SR-25 (Okeechobee Road) & NW 138th Street, SR-25 (Okeechobee Road) & NW 107th Avenue, NW 138th Street & NW 113th Av Road, and NW 107th Avenue & NW 127th Street will experience unacceptable LOS F for some of the approach movements resulting in an overall LOS E or F for these intersections.

By the design year in 2028, a majority of the intersections will operate at unacceptable LOS E or worse.

2.2 Access Corridor Analysis

A Level of Service analysis was also performed on the major roadway links within the study area. The Arterial LOS is based on the speed and the Arterial Class. The results of the traffic analysis on the corridor for the existing conditions are shown on **Table 2.2-A**.

TABLE 2.2-A
EXISTING (2005) ROADWAY LINKS LOS

Arterial	Cross Street	2005 AM				2005 PM			
		NW / NE		SE / SW		NW / NE		SE / SW	
		Link Speed	LOS	Link Speed	LOS	Link Speed	LOS	Link Speed	LOS
SR-25 (Okeechobee Road) / US 27	NW 138th Street	38.6	B	18.3	E	35.4	B	20.4	E
	NW 107th Avenue	45.1	A	33.0	C	44.0	A	37.2	B
	NW 121st Way	36.3	B	40.4	B	35.7	B	42.7	A
NW South River Drive	NW 121st Way	6.2	F	10.6	E	8.0	E	10.8	E
NW 138th Street	SR-25 (Okeechobee Road) / US 27	26.9	B	3.1	F	21.9	C	3.7	F
NW 107th Avenue	SR-25 (Okeechobee Road) / US 27	28.7	B	28.7	B	27.0	B	27.0	B
NW 121st Way	NW South River Drive	8.0	E	7.7	E	7.3	E	8.3	E

The existing LOS reflects that the majority of the corridor is already at capacity. A similar traffic analysis for the Existing, Opening, Interim and Design Year was performed on the roadway links for the No Build scenario. The results are shown in **Table 2.2-B.**

The results reveal that the main arterials which provide access into the project area, i.e. NW 107th Avenue and NW 138th Street will be operating at unacceptable LOS E or worse. The NW South River Drive arterial segment within the project limits is also expected to operate at unacceptable LOS E or worse during the analysis period. The remaining collectors within the project limits are expected to operate at acceptable LOS within the analysis period.

TABLE 2.2-B NO BUILD FUTURE ROADWAY LINKS LOS						
Arterial		Cross Street	AM PEAK		PM PEAK	
			NW / NE	SE / SW	NW / NE	SE / SW
2008 No-Build	SR-25 (Okeechobee Road) / US 27	NW 138th Street	C	F	B	F
		NW 107th Avenue	B	D	C	D
		NW 121st Way	B	B	C	B
	NW South River Drive	NW 121st Way	F	F	E	E
	NW 138th Street	SR-25 (Okeechobee Road) / US 27	C	F	B	F
	NW 107th Avenue	SR-25 (Okeechobee Road) / US 27	C	C	B	B
	NW 121st Way	NW South River Drive	E	F	F	F
2018 No-Build	SR-25 (Okeechobee Road) / US 27	NW 138th Street	D	F	F	F
		NW 107th Avenue	B	F	E	E
		NW 121st Way	B	C	B	B
	NW South River Drive	NW 121st Way	F	F	E	F
	NW 138th Street	SR-25 (Okeechobee Road) / US 27	C	F	B	F
	NW 107th Avenue	SR-25 (Okeechobee Road) / US 27	D	D	C	C
	NW 121st Way	NW South River Drive	E	E	F	F
2028 No-Build	SR-25 (Okeechobee Road) / US 27	NW 138th Street	E	F	F	F
		NW 107th Avenue	B	F	F	F
		NW 121st Way	B	D	C	C
	NW South River Drive	NW 121st Way	F	F	E	F
	NW 138th Street	SR-25 (Okeechobee Road) / US 27	C	F	B	F
	NW 107th Avenue	SR-25 (Okeechobee Road) / US 27	E	E	D	D
	NW 121st Way	NW South River Drive	E	E	F	F

2.3 Improvement Alternatives

Short term and long term LOS analysis was performed for each of the aforementioned intersections within the project area to determine the improvements required to maintain acceptable traffic operations within the project area. **Tables 2.3-A to 2.3-C** summarize the intersection LOS analysis along with the resulting intersection geometry requirements for both years 2008, 2018 and 2028. By the year 2008 the majority of the intersection improvements involved the addition of left and right turn lanes, as well as signal phasing and cycle optimization. The improvements for 2018 will involve dual left-turn lanes and the provision of some exclusive right-turn lanes. By the year 2028, the improvements will involve bridge widening and through lane additions and possible grade separation.

TABLE 2.3-A
2008 RECOMMENDED IMPROVEMENTS AND INTERSECTION LOS

Intersection	Recommended Improvements					LOS	
	Movement	Approach					
		SE/EB	SW/SB	NW/WB	NE/NB	AM	PM
US 27 / SR-25 (Okeechobee Road) & NW 138th Street	Left	2	S	1	2	C	D
	Through	3	1	3	1		
	Right	1	1	1	S		
US 27 / SR-25 (Okeechobee Road) & NW 107th Avenue	Left	N/A	N/A	1	2	B	C
	Through	3	N/A	3	N/A		
	Right	1	N/A	N/A	1		
US 27 / SR-25 (Okeechobee Road) & NW 121st Way	Left	N/A	N/A	1	1	B	B
	Through	3	N/A	3	N/A		
	Right	1	N/A	N/A	1		
NW 121st Way & NW South River Drive	Left	S	S	S	S	B	B
	Through	1	2	1	2		
	Right	S	S	S	S		
NW 138th Street & NW 113rd Av Road	Left	1	1	1	1	B	B
	Through	1	1	1	1		
	Right	S	S	S	S		
NW 107th Avenue & NW 127th Street	Left	1	S	1	S	B	C
	Through	1	2	1	2		
	Right	S	S	S	S		
NW 138th Street & Service Road	Left	S	S	S	S	A	A
	Through	1	2	1	2		
	Right	S	S	S	S		
NW South River Drive & NW 122nd Way	Left	N/A	N/A	1	1	A	A
	Through	1	N/A	1	N/A		
	Right	S	N/A	N/A	S		

(S) – Shared Thru and Right Turn Lane or Shared Thru and Left Turn Lane
N/A – not applicable – turning movement does not exist

TABLE 2.3-B 2018 RECOMMENDED IMPROVEMENTS AND INTERSECTION LOS							
Intersection	**Recommended Improvements**					**LOS**	
	Movement	**Approach**					
		SE/EB	**SW/SB**	**NW/WB**	**NE/NB**	**AM**	**PM**
US 27 / SR-25 (Okeechobee Road) & NW 138th Street	Left	2	S	1	2	C	D
	Through	3	1	3	1		
	Right	1	1	1	1		
US 27 / SR-25 (Okeechobee Road) & NW 107th Avenue	Left	N/A	N/A	1	2	B	B
	Through	3	N/A	3	N/A		
	Right	1	N/A	N/A	1		
US 27 / SR-25 (Okeechobee Road) & NW 121st Way	Left	N/A	N/A	2	2	B	B
	Through	3	N/A	3	N/A		
	Right	1	N/A	N/A	1		
NW 121st Way & NW South River Drive	Left	1	S	1	S	B	C
	Through	1	2	1	2		
	Right	S	S	S	S		
NW 138th Street & NW 113rd Av Road	Left	1	1	1	1	E	D
	Through	1	1	1	1		
	Right	S	S	S	S		
NW 107th Avenue & NW 127th Street	Left	1	S	1	S	C	D
	Through	1	2	1	2		
	Right	S	S	S	S		
NW 138th Street & Service Road	Left	1	S	1	S	A	A
	Through	1	2	1	2		
	Right	S	S	S	S		
NW South River Drive & NW 122nd Way	Left	N/A	N/A	1	1	B	B
	Through	1	N/A	1	N/A		
	Right	S	N/A	N/A	S		

(S) – Shared Thru and Right Turn Lane or Shared Thru and Left Turn Lane
N/A – not applicable – turning movement does not exist

TABLE 2.3-C 2028 RECOMMENDED IMPROVEMENTS AND INTERSECTION LOS							
Intersection	**Recommended Improvements**					**LOS**	
	Movement	**Approach**					
		SE/EB	**SW/SB**	**NW/WB**	**NE/NB**	**AM**	**PM**
US 27 / SR-25 (Okeechobee Road) & NW 138th Street	Left	2	S	1	2	D	E
	Through	3	1	3	1		
	Right	1	1	1	1		
US 27 / SR-25 (Okeechobee Road) & NW 107th Avenue	Left	N/A	N/A	1	2	D	C
	Through	3	N/A	3	N/A		
	Right	1	N/A	N/A	2		
US 27 / SR-25 (Okeechobee Road) & NW 121st Way	Left	N/A	N/A	2	2	C	B
	Through	3	N/A	3	N/A		
	Right	1	N/A	N/A	1		
NW 121st Way & NW South River Drive	Left	1	S	1	S	C	C
	Through	2	2	2	2		
	Right	S	S	S	S		
NW 138th Street & NW 113rd Av Road	Left	1	1	1	1	B	C
	Through	1	2	1	2		
	Right	S	S	S	S		
NW 107th Avenue & NW 127th Street	Left	1	1	1	1	A	B
	Through	1	2	1	2		
	Right	S	S	S	S		
NW 138th Street & Service Road	Left	1	S	1	S	A	A
	Through	1	2	1	2		
	Right	S	S	S	S		
NW South River Drive & NW 122nd Way	Left	N/A	N/A	1	1	B	B
	Through	2	N/A	2	N/A		
	Right	S	N/A	N/A	S		

(S) – Shared Thru and Right Turn Lane or Shared Thru and Left Turn Lane
N/A – not applicable – turning movement does not exist

3.0 EXISTING TRANSPORTATION INFRASTRUCTURE

3.1 Roadway Corridors and Associated Typical Sections

3.1.1 Roadway Functional Classification

Functional Classifications is defined by the FHWA Urban Boundary and Federal Functional Classification Handbook as "the process [by which] streets and highways are grouped into classes, or systems, according to the character of services they provide. The designation of federal functional classification is made at least once every 10 years following the decennial census taken by the U.S. Bureau of Census. According to the 1992 Federal Functional Classification, SR-25 (Okeechobee Road) is part of the Florida Intrastate Highway System (FIHS) which runs in a northwest-southeast direction. This major roadway is located on the north side of the study area. The typical cross section for SR-25 (Okeechobee Road) within the project limits is a six-lane divided urban principal arterial. The posted speed limit is 50 mph. The road is classified as an Access Classification 2: restrictive median roadway with service roads.

Across the Miami Canal on the south side of SR-25 (Okeechobee Road), NW South River Drive runs parallel to SR-25 (Okeechobee Road) from NW 107th Avenue, southeast beyond the project limits. NW South River Drive is a two-lane undivided facility. The road connects to the study area through NW 122nd Street. The posted speed limit on NW South River Drive is 30 mph. The segment of NW South River Drive from NW 107th Avenue to the Palmetto Expressway/SR 826 was studied in Phase I of the Feasibility Study (See **Appendix C**). The previous roadway classification of Urban Collector was changed to Minor Arterial according to the Town of Medley's Roadways Jurisdictional and Classification Map.

NW 122nd Street, previously identified as an Urban Collector, has been recently extended as an Urban Collector west from NW South River Drive to NW 115th Avenue, just east of the Florida Turnpike. This roadway provides a connection to the terminus of NW South River Drive to the study area. NW 115th Avenue is a newly constructed roadway. It is also classified as an Urban Collector and provides a link from NW 122nd Street to NW 138th Street.

Major street crossings along SR-25 (Okeechobee Road) are located at the signalized intersections of NW 138th Street, NW 107th Avenue and NW 121st Way. The intersection of SR-25 (Okeechobee Road) and NW 121st Way is a Turbo-T intersection, where one of the major streets through movement lanes (SR-25 (Okeechobee Road) in the northwest direction) operates under free flow conditions. The minimum signal spacing and median opening requirements for Class 2 along SR-25 (Okeechobee Road) are both 2,640 feet. Based on this, the current signal spacing and full median opening of 2,888 feet between NW 138th Street and NW 107th Avenue meets the requirements of the access management classification for Class 2.

The Town of Medley made various recommendations for upgrading many of the existing classifications and adding roadways to the system which were currently unclassified. The current classifications were developed by Metric Engineering and are included in Appendix "A".

3.1.2 Corridor Inventory and Associated Roadway Characteristics

An extensive corridor inventory and roadway characteristics were obtained for the various roadway links within the project area from field visits and existing as-built plans. The cross section characteristics information collected for the roadway links is shown in **Exhibit 3-1**.

3.1.3 Posted Speed Limits

Many of the roadway links within the study area have no posted speed limit. Field reviews show that the typical posted speed limit for links within the project limit is 30mph. The SR-25 (Okeechobee Road) which is a principal arterial has a posted speed limit of 50mph. **Exhibit 3-1** shows the corridor inventory with the posted or design speed limits.

3.1.4 Horizontal and Vertical Alignment of Corridors

Most of the roadway links within the study area are on a straight/tangent alignment, except NW 138th Street between NW 113th Avenue Road and the FEC Railroad which has a curvilinear geometry. **This horizontal curve needs to be redesigned due to sight distance deficiencies.**

The project area has mostly a flat topography. The roadways do not indicate any undulating profile except at the bridges over the Miami Canal where the vertical curves are clearly visible. A topographical survey was not done for this project; therefore, further investigation is required to establish the real vertical geometry of the network.

3.1.5 Horizontal Clearance/Clear Zone

Horizontal Clearance, Clear Zone and Control Zones are also important design criteria that must be evaluated when designing roadways and intersections. According to FDOT's Plans Preparation Manual (PPM), Horizontal clearance is defined as the lateral distance from a specified point on the roadway such as the edge of the travel lane or face or curb, to a roadside feature or object. Clear zone is defined as the roadside area available for safe use by errant vehicles. Control zones are defined as areas in which it can be statistically shown that crashes are more likely to involve departure from the roadway with greater frequency of contact with above ground objects. Common examples of control zones include the area within the return radii of an intersecting street and the new construction horizontal clearance distance. (See **Appendix E** for an excerpt from FDOT's PPM for Control Zones).

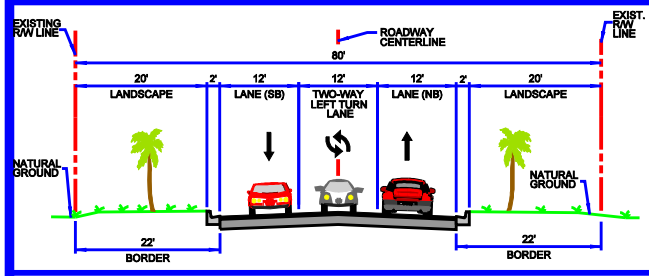
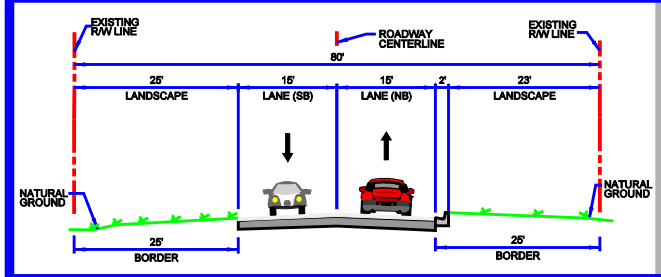
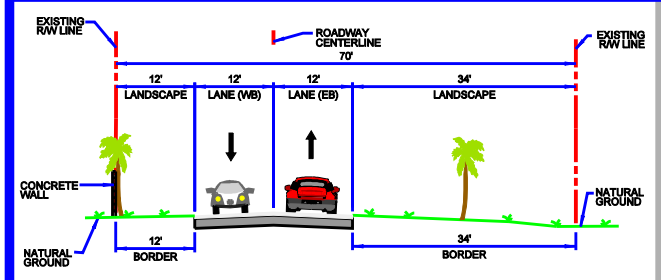
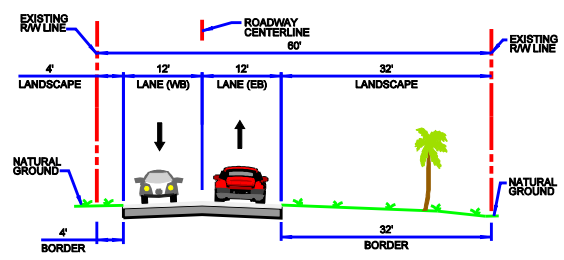
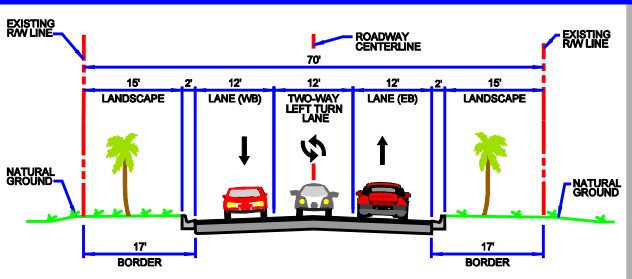
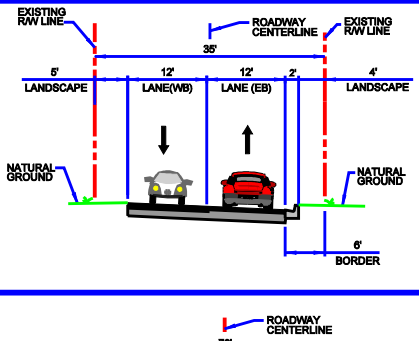
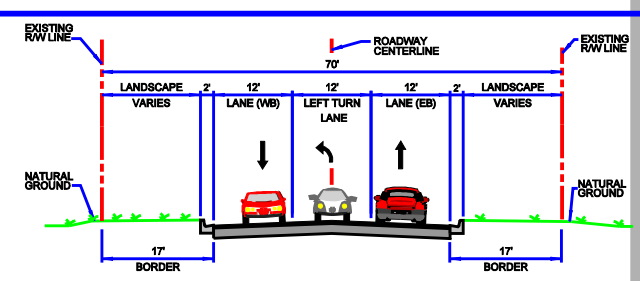
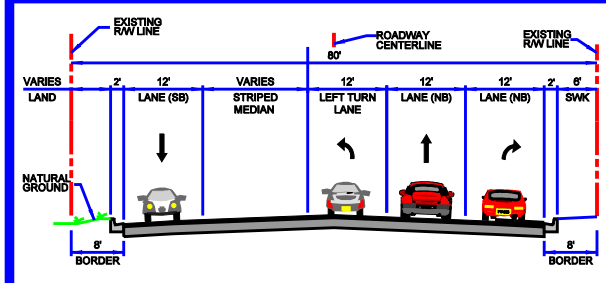
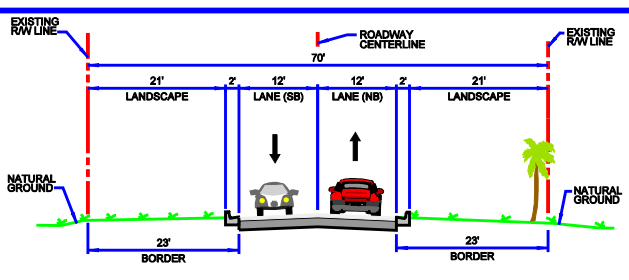
	FEATURES									REMARKS
	BORDER WIDTH	MEDIAN	LANE WIDTH	HORIZONTAL CLEARANCE	SIDEWALK	LAND-SCAPING WIDTH	POSTED SPEED	EXISTING R/W	SIGHT DISTANCE	
	NW 113TH AVE. RD. S. OF NW 138TH ST.	22'	12' DUAL LEFT TURN	12'	CLEAR	N/A	20'	30 mph	80'	OK	
	NW 113TH AVE. RD. N. OF NW 138TH ST.	25'	NO	15'	CLEAR	N/A	25'/23'	30 mph	80'	OK	
	NW 138TH STREET E. OF 113TH AVE. RD.	12'/34'	NO	12'	CLEAR	N/A	12'/34'	30 mph	70'	OK	
	NW 138TH STREET W. OF 113TH AVE. RD.	4'/32'	NO	12'	CLEAR	N/A	4'/32"	30 mph	60'	NOT OK AT CURVE	HORIZONTAL CURVE NEEDS TO BE REDESIGNED
	NW 128TH STREET & NW 131ST STREET.	17'	12' DUAL LEFT TURN	12'	CLEAR	N0	VARIES 15' MIN	30 mph	70'	OK SEE NOTE	NOT GOOD AT THESE TWO (L) CORNERS: NW 113 CT. & NW 128 ST. NW 107 CT. & NW 131ST.
	NW 127TH STREET E. OF NW 107TH AVE.	5'/6'	NO	12'	CLEAR	NO	NO	30 mph	35'	OK	RIGHT OF WAY MAY BE 70'
	NW 127TH STREET W. OF NW 107TH AVE.	17'	12' LEFT TURN	12'	CLEAR	NO	NO	30mph	70'	OK	
	NW 107TH AVENUE S. OF 127TH STREET	8'	VARIES 12' MIN	12'	CLEAR	6'	VARIES 6' MIN	40mph	80'	OK	
	NW 107TH AVENUE N. OF 127TH STREET	23'	NO	12	OK	NO	23'	30 mph	70'	OK SEE NOTE	VERTICAL CURVE AT BRIDGE TO BE ADJUSTED

EXHIBIT 3.1
CORRIDOR INVENTORY AND ASSOCIATED ROADWAY CHARACTERISTICS

THE TOWN OF MEDLEY

CGTS

THE TOWN OF MEDLEY

NW SOUTH RIVER DRIVE CORRIDOR STUDY AREA EXPANSION MASTER PLAN

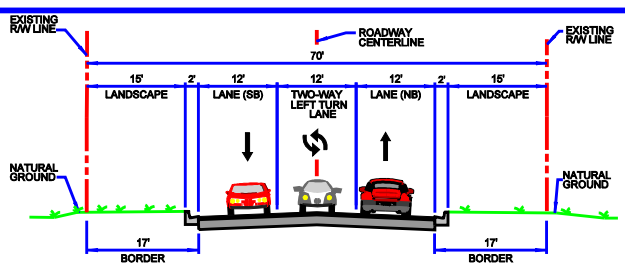
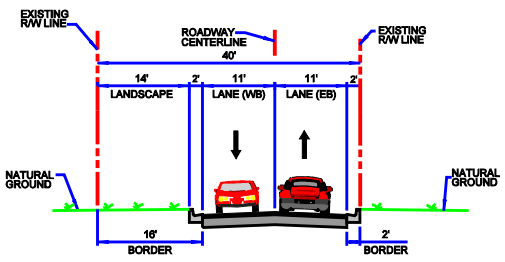
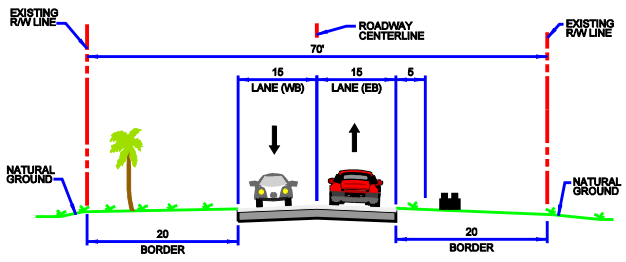
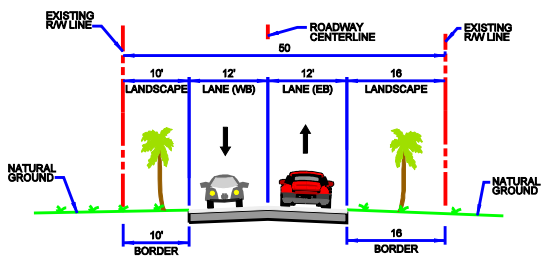
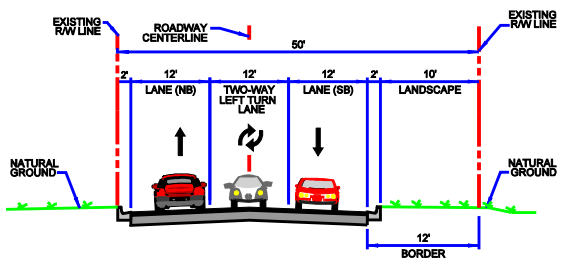
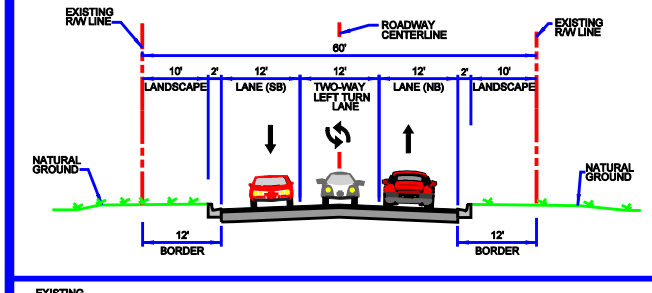
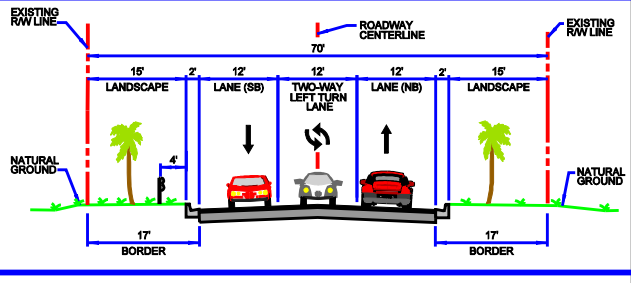
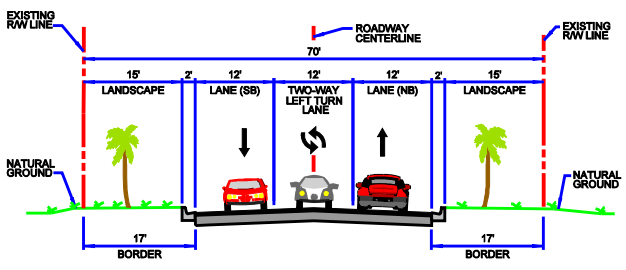
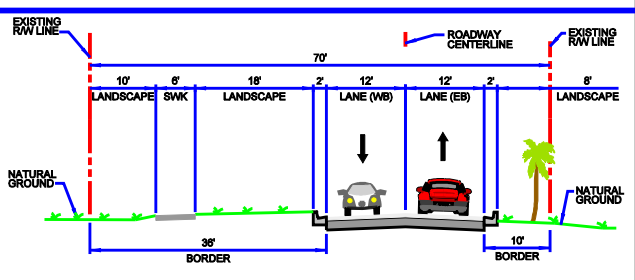
	FEATURES									REMARKS
	BORDER WIDTH	MEDIAN	LANE WIDTH	HORIZONTAL CLEARANCE	SIDEWALK	LAND-SCAPING WIDTH	POSTED SPEED	EXISTING R/W	SIGHT DISTANCE	
 NW 115TH AVENUE	17'	12' DUAL LEFT TURN	12'	CLEAR	NO	15'	30 mph	70'	OK	
 NW 122ND WAY	16'/2'	NO	11'	CLEAR	NO	14' NORTH SIDE	30 mph	40'	OK	
 NW 121ST WAY S. OF FEC RAILROAD	20'	NO	15'	CLEAR	NO	5' SOUTH SIDE	30 mph	70'	OK	RIGHT OF WAY MAY BE MORE THAN 70'
 NW 121ST WAY N OF FEC RAILROAD	10'/16'	NO	12'	CLEAR	NO	NO	30 mph	50'	OK	
 NW 124TH WAY	10'/2'	12' DUAL LEFT TURN	12'	CLEAR	NO	10' EAST SIDE	30 mph	50'	OK	
 NW 122ND STREET	12'	12' DUAL LEFT TURN	12'	CLEAR	NO	10'	30 mph	60'	OK	
 NW 107TH COURT	17'	12' DUAL LEFT TURN	12'	CLEAR	NO	15'	30 mph	70'	OK	NOT GOOD AT CORNER: OF NW 107 CT. & NW 131 ST.
 NW 113TH COURT	17'	12' DUAL LEFT TURN	12'	CLEAR	N0	VARIES 15' MIN	30 mph	70'	OK SEE NOTE	NOT GOOD AT CORNER: OF NW 113 CT. & NW 128 ST.
 NW S. RIVER DRIVE	36'/10'	NO	12'	OK	6' EAST SIDE	21'	35mph	70'	OK	FLUSH SHOULDER FROM NW 107 AVE. TO BUDGET

EXHIBIT 3.1
CORRIDOR INVENTORY AND ASSOCIATED ROADWAY CHARACTERISTICS

3.2 Major Project Intersections

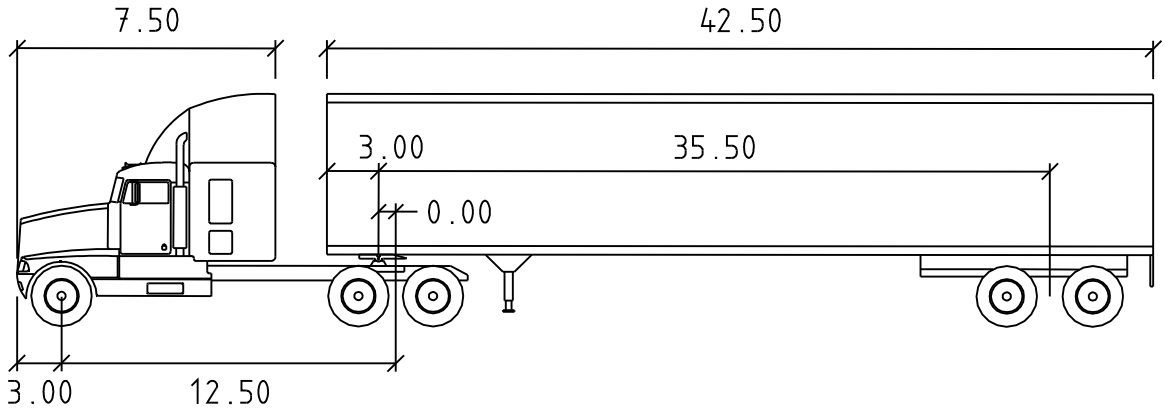
Most of the major intersections within the project area, which also serve as the main access to the Medley West Industrial Area, are primarily signalized intersections. These include: NW 121st Way, NW 107th Avenue, NW 138th Street and SR-25 (Okeechobee Road), NW 121st Way and NW South River Drive.

One of the most important features to consider for properly designing intersections is the design vehicle. As defined by FDOT's "Florida Intersection Design Guide":

> "A design vehicle is a selected motor vehicle with the weight, dimensions and operating characteristics used to establish design controls for accommodating vehicles of a designated class. For purposes of geometric design, each design vehicle has larger physical dimensions and a larger minimum turning radius than those of almost all vehicles in its class."

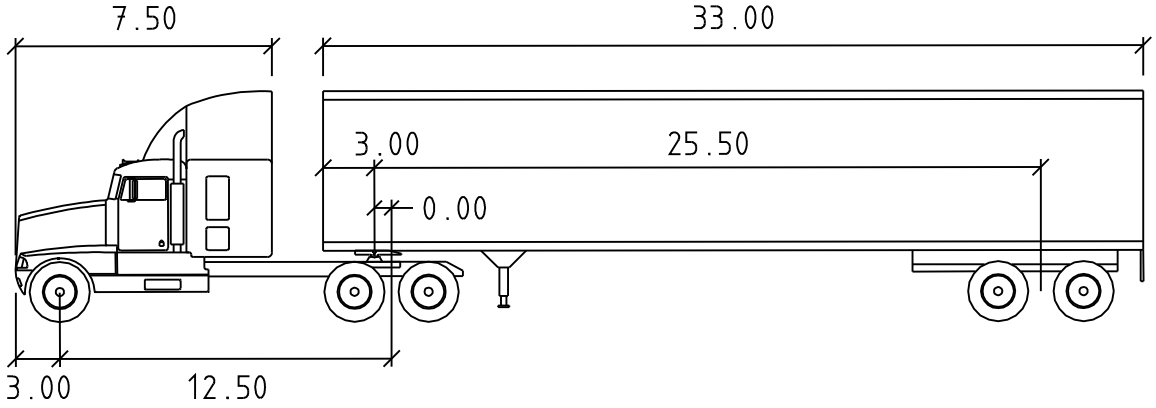
Since the Town of Medley is highly industrial in nature and subjected to constant exposure to large tractor-trailer truck traffic, the design of their intersections should be based on larger design vehicles such as the WB-40 or WB-50. A preliminary analysis of the intersections listed above was performed using a 75' control radius. The control radius refers to the radius that must be considered in establishing the stop bars on undivided highways. According to Table 3-16 listed in the Florida Intersection Design Guide, a control radius of 75 ft. should be used where the predominant vehicles accommodated are WB-40 with an occasional WB-50. This sets the geometry of an intersection to accommodate the left turns of the larger vehicles. Field visits confirmed that many of the major intersections within the project area are exposed to the larger tractor-trailer trucks, i.e. WB-50 or even greater. **Future analysis of this corridor should evaluate all major intersections for a WB-50 truck. A benefit-cost analysis (WB-40 /WB-50) is recommended to determine what is best for the particular intersection under review.**

Equally as important is obtaining adequate right-of-way at the intersection corners. This is governed by providing the proper corner radius for the design vehicle. According to Table 3-12 listed in the Florida Intersection Design Guide, a corner radius of 45 ft. allows for a moderate speed turn for the smaller P vehicles (cars), low speed turn for the SU type vehicles and crawl speed turn for WB-40 or WB-50 vehicle with minor encroachment. A 50 ft radius provides a moderate speed turn for all vehicles up to a WB-50. The speed of the turn affects the capacity of the intersection. Slow moving turns will require longer signal green time to clear the intersection and creates greater traffic backups. The following intersections were analyzed using a WB-50 design vehicle for both left and right turn movements. The dimensions of the WB-40 and WB-50 design vehicle are shown on **Exhibit 3-2**.



WB-50 feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.00
Trailer Width	: 8.50	Steering Angle	: 17.70
Tractor Track	: 8.00	Articulating Angle	: 70.00
Trailer Track	: 8.50		



WB-40 feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.00
Trailer Width	: 8.00	Steering Angle	: 20.30
Tractor Track	: 8.00	Articulating Angle	: 70.00
Trailer Track	: 8.00		

The turning paths of the WB-50 vehicle were modeled using Autoturn, a computer program that models the front and rear wheel paths of a vehicle. The results of this analysis are presented in the attached exhibits. The analysis was performed utilizing uncontrolled aerials provided by FDOT. These aerials were scaled to provide 12 ft. lanes. Field measurements were taken at each intersection and applied to each intersection on the aerial. The location of the existing stop bars and stripping was approximated on the aerial from the field recordings. The analysis shown is for existing conditions only with minor modifications to existing stripping where such measures helped improve the turning maneuvers.

3.2.1 SR-25 (Okeechobee Road) & NW 138th Street

SR-25 (Okeechobee Road) and NW 138th Street is one the three major access points for the Medley West Industrial Area. SR-25 (Okeechobee Road) is a six-lane divided major arterial. At this intersection, both SR-25 (Okeechobee Road) approaches have also a left turn lane, and an exclusive right turn lane. The Turning lanes are approximately 400-ft long, and all lanes are 12-ft wide. The NW 138th Street legs have a different geometry and lane assignment. For instance, the west leg seems to have one thru lane, one left turn lane, and one lane at departure, but there are no visible markings. The east leg has a 4-lane section with a thru lane and a left turn lane at the approach, and two lanes at departure. The traffic signal mast arms and the light poles appear to be located outside the control and clear zone respectively. They are shielded by guardrail at the NW and SW corners.

Right Turn Analysis:

The Autoturn analysis shown on **Exhibit 3-3** indicates that the design vehicle is **not** able to make a right turn without leaving the existing pavement. In the case of the right turn movements going into and leaving the Medley West Industrial Area, the design vehicle paths go beyond the right of way or above the Miami canal. We have repeatedly witnessed vehicles making a three-point turn to go in and vehicles veering left onto the departure lane to make a right out of Medley. **This creates a very dangerous situation, which underscores the need to widen the bridge with corner radii modeled on the wheel path of the simulation. (See Exhibit 3-3)**. A five lane section through the bridge and carried until the NW 113th Avenue, & 138th Street is required to improve these turns and enhance safety at this intersection. This intersection is currently being widened under Miami-Dade Public Works Project No. 2003191. Additional improvements are being done under FDOT Financial project ID 4164233. Preliminary files for the bridge widening obtained from the designer show different lanes greater than 12 ft along SR-25 (Okeechobee Road). For instance, the existing exclusive right turn lane into Medley and the outside through lanes

(southeast bound) seems to have been converted into a wide shared through and right lane. These plans also show a 15 ft and 20ft corner radii for the southwest and southeast corner respectively; and the five lane typical section along the bridge. This geometry is not adequate to handle the right turns of the design vehicle as depicted in Appendix F. It is essential to provide wider radius return at both SW and SE corners, with no less than a 50-ft radius to accommodate WB-50 vehicles.

Left Turn

The left turn analysis is shown on **Exhibit 3-4**. All four left-turning movements are significant and the design vehicle can safely negotiate each one within the existing geometric parameters.

In short, geometric improvements at this intersection are dictated only by the right turning movements.

Recommendations

- Synchronize the traffic signal along SR-25 (Okeechobee Road) between NW 138th Street and NW 107th Avenue.
- Develop right-of-way maps for the corridor and evaluate obtaining the corner clips at the northwest and southwest corner for bridge flaring to allow proper right turn movement.
- Widen the bridge at this intersection to a 5-lane section by 2008 and further to a 6-lane section by 2018 to add an exclusive right turn lane on the northeast bound approach. The 5-lane bridge is currently under design by the Miami-Dade County Public Works Department and is scheduled for construction by 2007. However, the structure must be constructed at a higher elevation to accommodate future widening needs.
- Reconfigure traffic signal to reflect the improvements at the intersection.

OKEECHOBEE ROAD

NW 138TH STREET

OKEECHOBEE ROAD

SEQUENCE OF EASTBOUND RIGHT TURNING MOVEMENT ON NW 138TH STREET ENCROACHMENT ON APPROACH LANE

N

0 10 40

Feet

THE TOWN OF MEDLEY FLORIDA

EXHIBIT 3-3

SR-25 (OKEECHOBEE ROAD) & NW 138TH STREET- RIGHT TURN

CGTS

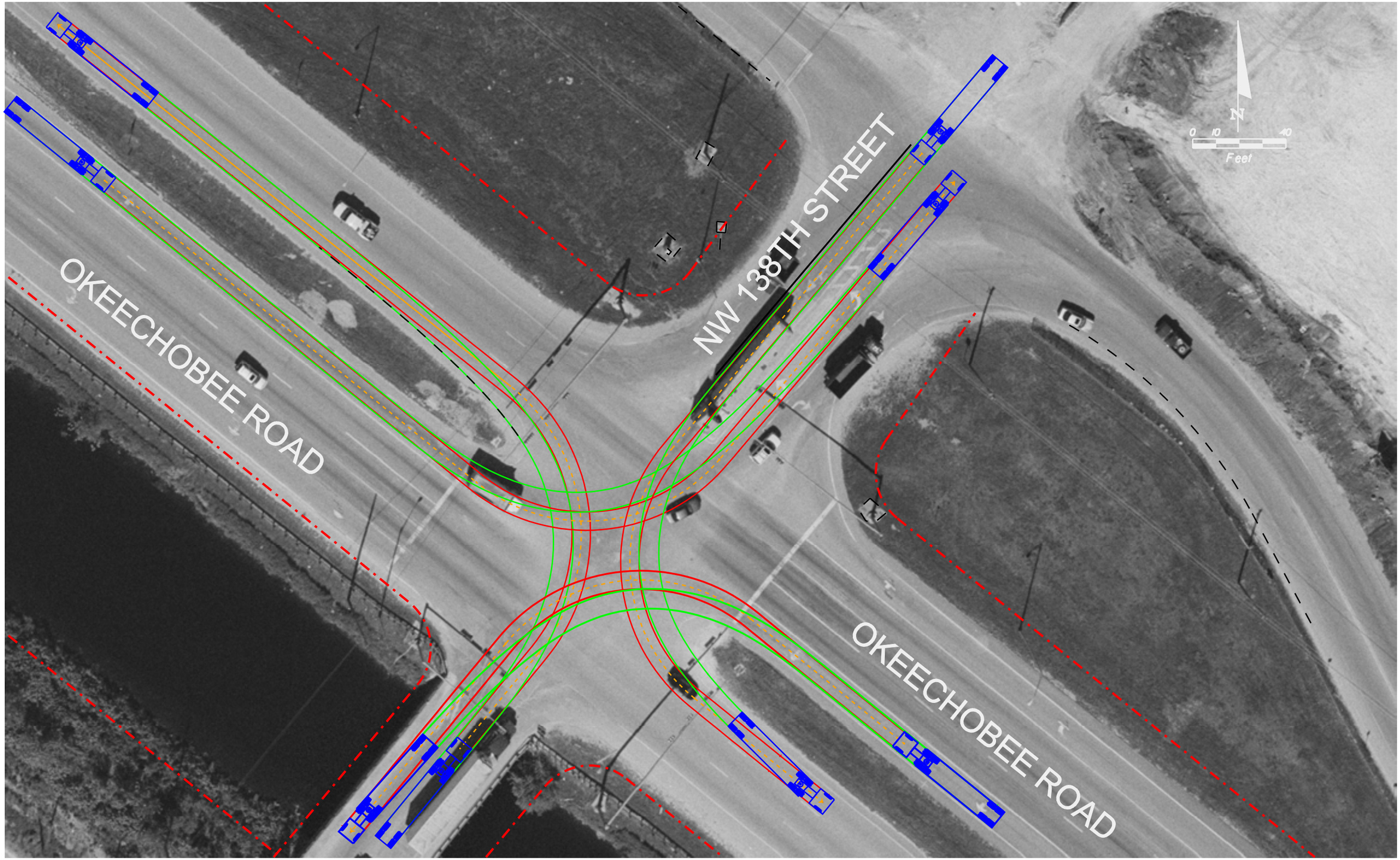


EXHIBIT 3-4
SR-25 (OKEECHOBEE ROAD) & NW 138TH STREET - LEFT TURN

3.2.2 SR-25 (Okeechobee Road) & NW 107th Avenue

The intersection of SR-25 (Okeechobee Road) and NW 107 Avenue is a T intersection. The NW 107th Avenue corridor is designed as a Minor Arterial due to future plans to extend it north and south as a County Road Major Arterial. The existing typical section on SR-25 (Okeechobee Road) consists of four 12-ft lanes in the southeasterly direction, and three 12-lanes in the northwesterly direction with inside and outside paved shoulders, and a grassed median. The existing typical section on the NW 107 Avenue consists of three 12-foot lanes.

Right Turn Analysis

The Autoturn analysis shown on **Exhibit 3-5** for right turns indicates that **the intersection is not adequately designed to handle the right turns.** For instance, a WB-40 or WB-50 design vehicle wanting to make a right turn from or into SR-25 (Okeechobee Road) can not negotiate this maneuver without encroaching into the paved shoulder. Trucks turning right from or onto the bridge must swing out to make the turn to avoid clipping into the bridge walls. This blocks the intersection approach and decreases intersection capacity. **Widening of the existing bridge will provide for safe turning maneuvers and improve capacity within the intersection. Re-stripping of the chevron on the northbound approach can also provide better channelization to turning trucks and should be done immediately.**

Left Turn Analysis

As can be seen on **Exhibit 3-6** the Autoturn simulation analysis indicates that **the southbound left turn presents major difficulties to safely maneuver the turn into NW 107 Avenue.** An approaching truck attempting a left turn has to encroach into the lane of the opposing traffic. A vehicle waiting to proceed through the intersection will be required to back up to allow the left turning WB-40 or WB-50 to clear the intersection. As observed in the figure, the stop bar on the northbound left turn may be required to be pushed back approximately 75 feet or more. While this may alleviate this situation, other design features such as stop sight distance will require a thorough analysis. Adequate distance must also exist from the stop bar to the existing traffic signal. Improvements to the intersection require widening of the existing bridge.

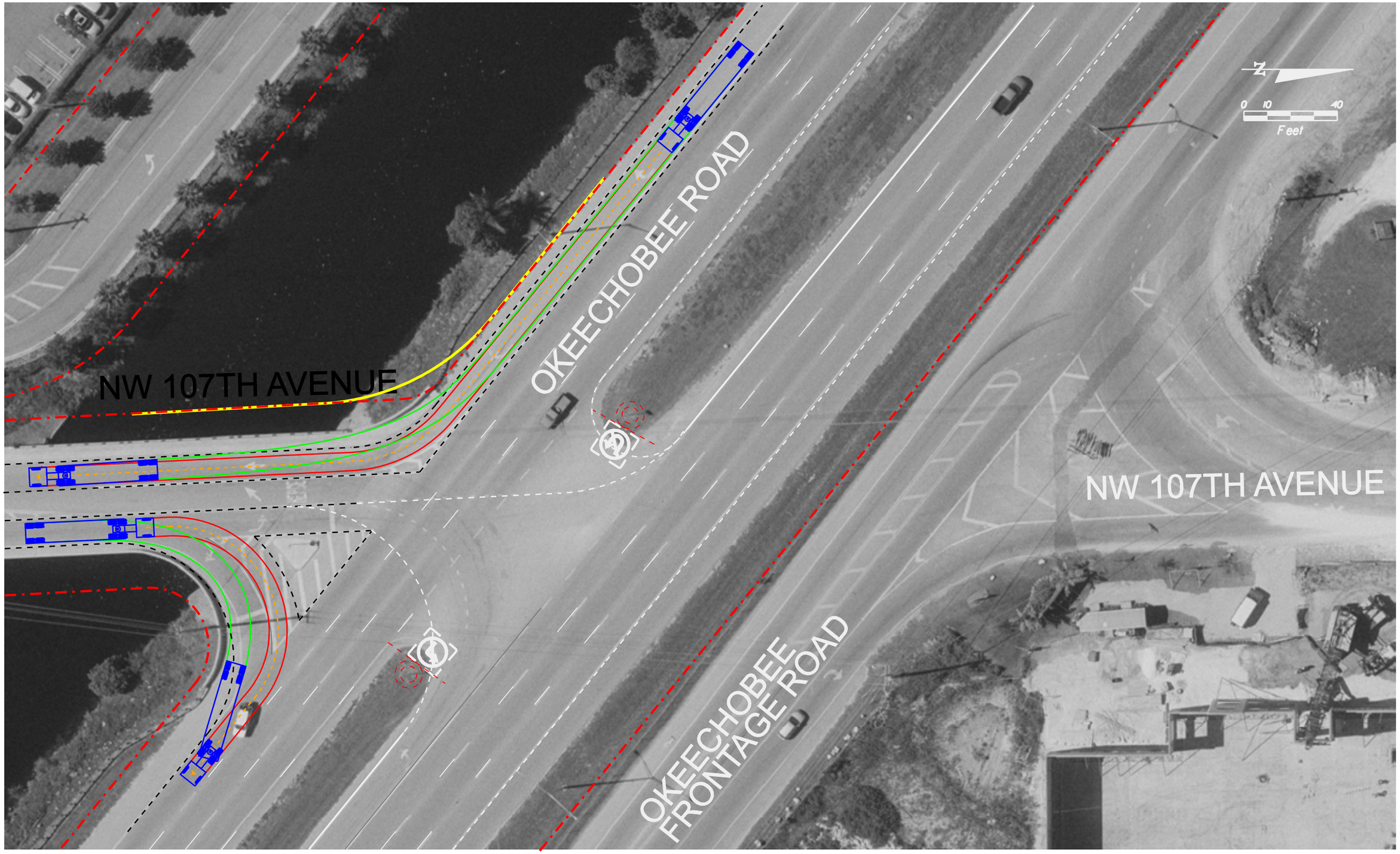


EXHIBIT 3-5
SR-25 (OKEECHOBEE ROAD) & NW 107TH AVENUE

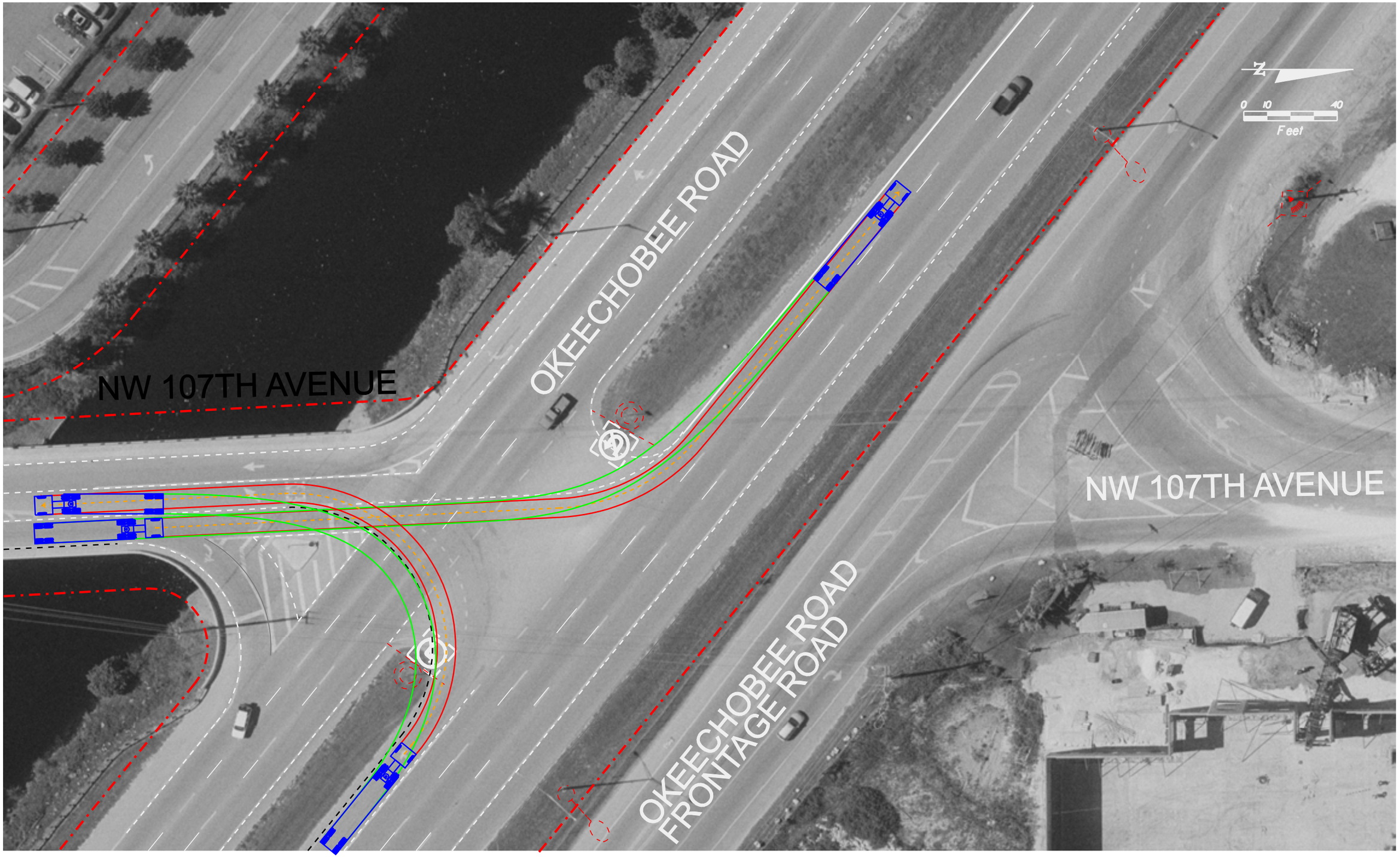


EXHIBIT 3-6

SR-25 (OKEECHOBEE ROAD) & NW 107TH AVENUE - LEFT TURN

Recommendations

- Maintain the current traffic signal at this intersection (NW 107th Avenue and SR-25 Okeechobee Road). Warrants 1, 2, 3, and 6 are satisfied.
- Synchronize the traffic signal along SR-25 (Okeechobee Road) between NW 138th Street and NW 107th Avenue.
- Determine the available right-of-way at the intersection and investigate obtaining the corner clip for bridge flaring to allow proper right turn movement.
- Widen the bridge at this intersection to a 5-lane section by 2008 and further to a 6-lane section by 2028 to accommodate dual left turns and right turns exiting the Town of Medley Industrial area.
- Upgrade the existing signal (wire span) to current standards (mast arm).
- Reconfigure traffic signal to reflect the improvements at the intersection.

3.2.3 SR-25 (Okeechobee Road), NW South River Drive & NW 121st Way

NW 121st Way at SR-25 (Okeechobee Road) is a signalized four-legged intersection and a major access point connecting the Medley West Industrial Area with the rest of the town and the adjacent communities. The existing typical section on the eastbound approach along SR-25 (Okeechobee Road) consists of four 12-ft lanes, three thru lanes and an exclusive right turn lane, 5-foot inside paved shoulder and 10-foot outside paved shoulder. The westbound approach consists of four 12-ft lanes, with 5-ft inside paved shoulder and 10-ft outside paved shoulder. The intersection of SR-25 (Okeechobee Road) and NW 121st Way is a Turbo intersection, where one through movement of the major street (SR-25 (Okeechobee Road) in the northwest direction) operates under free flow conditions. Currently the two outside westbound lanes operate under this condition while the inside westbound and the left turn southbound movement are signal controlled.

Right Turn Analysis

The existing corner radii were approximated at 40 ft. or 50 ft. The Autoturn analysis shown on **Exhibit 3-7** for right turns indicates that **the intersection is not adequately designed to accommodate the maneuver of the design vehicle.** The Autoturn analysis conducted assumes that the vehicle making the turn is centered in the lane of travel before beginning

to turn. This is not the case for vehicles on the short bridges that cross the Miami Canal. Tractor-trailer trucks that turn onto the bridge from SR-25 (Okeechobee Road) (either right turn or left turn) do not have sufficient bridge length to straighten out before making the right turn onto NW South River Drive. Right turning trucks have a tighter corner radius to contend with which forces them to take a wide turn using the adjacent lane to avoid clipping the existing barrier (or guardrail) at the SR-25 (Okeechobee Road) side.

Trucks wishing to turn right from NW South River Drive onto the bridge have also caused some damage to the existing barrier wall. Those trucks that turn right onto the bridge and desire to turn left onto SR-25 (Okeechobee Road) encroach on the adjacent lanes and block part of the already minimum storage capacity afforded by the bridge.

Interviews held with Officer Jorge Perez of the Medley Police Department revealed that other issues exist at this intersection and at all intersections with bridge access to SR-25 (Okeechobee Road). He stated that the traffic signals at SR-25 (Okeechobee Road) and NW South River Drive are not synchronized and drivers often block the through movement on NW South River Drive trying to beat the signal and not get caught in the next cycle. In this particular intersection, Mr. Perez indicated that some drivers perform illegal maneuvers to avoid the backup for the through movement on the bridge. These drivers get into the left lane of the approaching NW 121st Way and then proceed straight instead of making the left onto NW South River Drive. When on the bridge, they attempt to merge back into the through movement lanes.

Left Turn Analysis

The left turn analysis is shown on **Exhibit 3-8**. Left turn maneuvers were simulated with a 75-feet control radius. The critical movements at this intersection occur at two of the four turning movements. The first involves the left turn from NW 121st Way to NW South River Drive (northwesterly direction). As can be seen in this Figure, the rear wheel path of the design vehicle encroaches into the eastbound lane. The location of the existing stop bar on the NW South River Drive would have to be pushed back. A better solution would consist of the widening of the eastbound approach within the right of way limits to allow for a safer vehicle maneuver at the approach.

The second left turn movement to consider is the one that begins at the bridge and turns into NW South River Drive (southeasterly direction). Although the maneuver seems to be

working, the curb is showing some signs of deterioration. This is one area of concerns for the right turns as discussed above. The existing traffic signal pole at this location is in close proximity to the travel lane.

There is a safety concern for both left and right turning vehicles due to the potential for impact to this signal pole. Additionally, this intersection is showing significant signs of deterioration due to the constant heavy tractor-trailer traffic. The bridge crossing also has no visible pavement markings to delineate the travel lanes.

Recommendations

- Synchronize the traffic signal on NW South River Drive with the signal on SR-25 (Okeechobee Road).
- Determine the available right-of-way at the intersections and evaluate obtaining corner clips for proper left and right turn movements. Improving corner radius must consider impacts to NUI City Gas Company's Sub Station #1 located on Miami Canal side. (See picture on the previous page). This facility most-likely require relocation. There status on whether or not they will have compensable interests, thus requiring reimbursement will need to be determined.
- Widen the bridge over the Miami Canal to a 5-lane section by 2018 and further to a 6-lane section by 2028 to accommodate dual left turns and right turns exiting the town.
- Reconfigure traffic signal to reflect the improvements at these intersections.

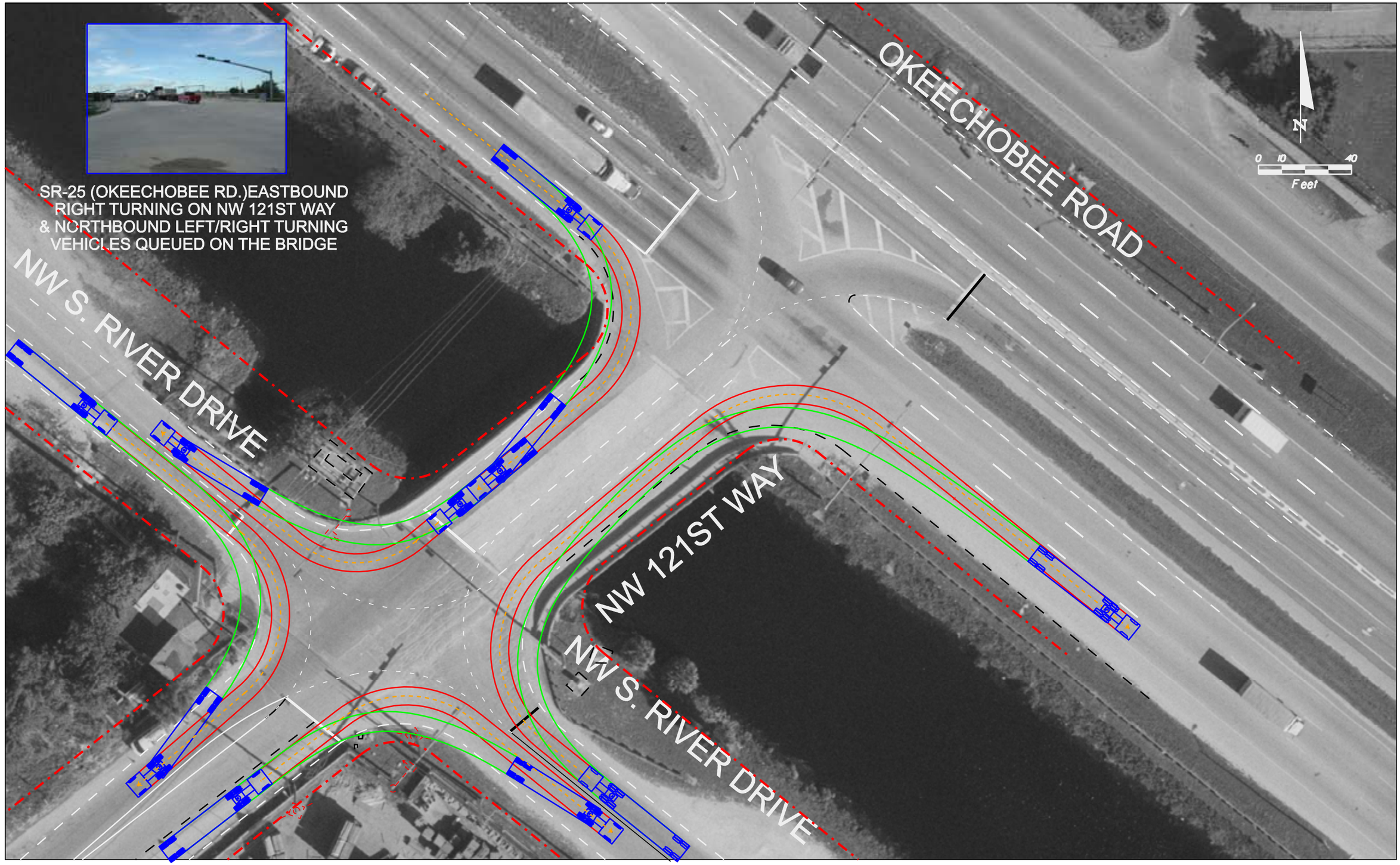


EXHIBIT 3-7
OKEECHOBEE ROAD & NW 121ST WAY - RIGHT TURN
SOUTH RIVER DRIVE & NW 121ST WAY - RIGHT TURN

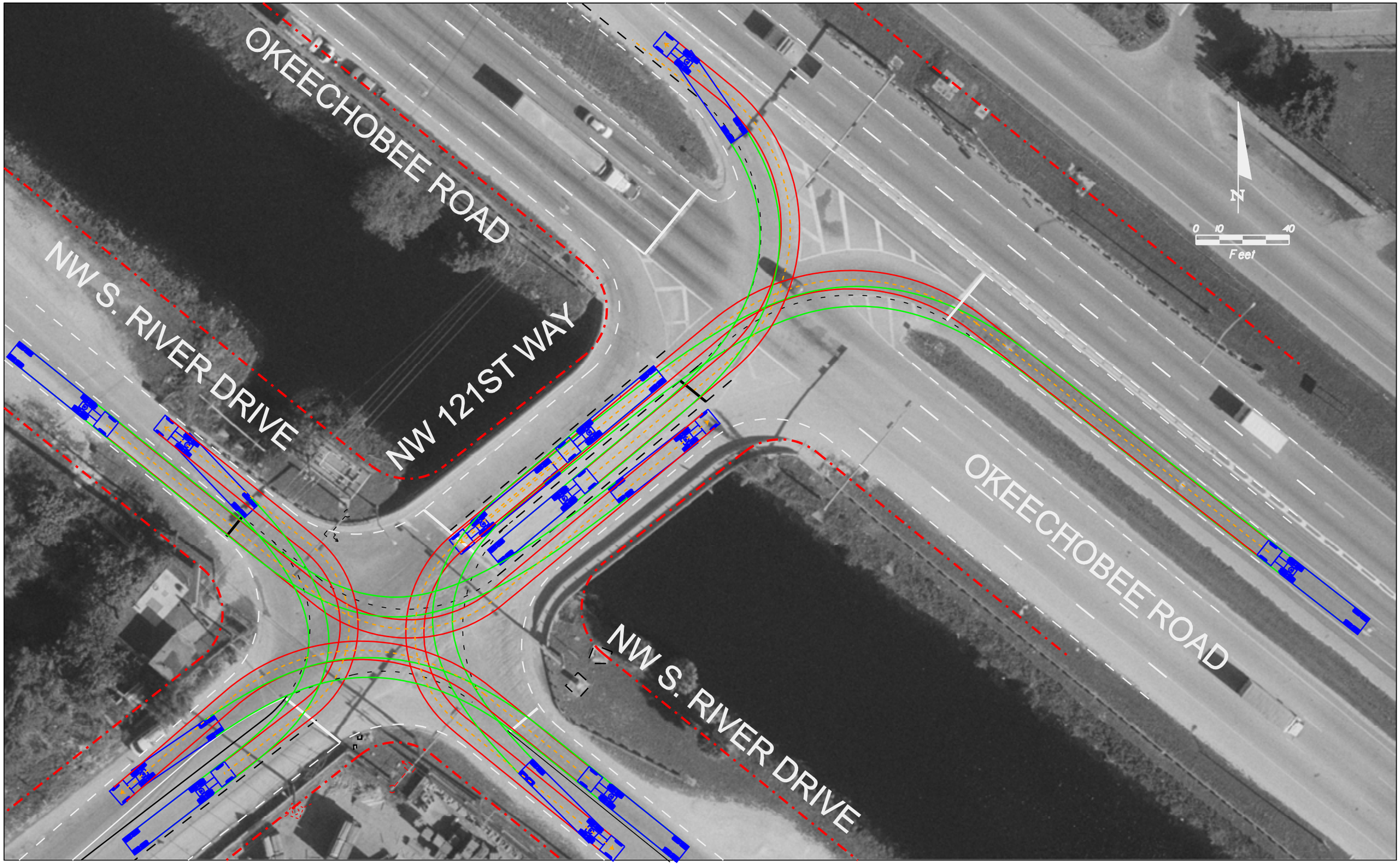


EXHIBIT 3-8
OKEECHOBEE ROAD & NW 121ST WAY - LEFT TURN
SOUTH RIVER DRIVE & NW 121ST WAY - LEFT TURN

3.2.4 NW South River Drive & NW 122nd Way

The intersection of NW South River Drive and NW 122nd Way is a 3-leg intersection where the through movement lanes (NW South River Drive in the northwest and southeast directions) operates under free flow conditions.

The aerials obtained for this project were shot prior to the construction of the widening of the intersection on the northwest quadrant. Therefore, **Exhibit 3-9** is not a true representation of the actual site. However, based on field observations and measurements conducted by our design team it was possible to complete the simulation.

Right Turn Analysis

The Autoturn analysis shown on **Exhibit 3-9** for right turns indicates that the rear wheel path of the design vehicle encroaches into the corners. Trucks turning right onto NW South River Drive from NW 122nd Way must swing out to make the turn. Right turning trucks have a tight corner radius to contend with at this approach. A viable solution that can be implemented immediately would consist of providing a greater corner radius. The edge of pavement would have to follow the path shown in the simulation or a minimum of 50-ft radius would have to be provided for the corner return.

Left Turn Analysis

According to **Exhibit 3-10**, the Autoturn simulation it appears that there is sufficient and adequate intersection width to maneuver the left turn movements through the intersection. However, re-stripping of the entire intersection is recommended to allow for safer maneuvers throughout it.

Recommendations

- Provide a minimum corner radius of 50 ft at the southeast corner for proper return
- Resurface intersection to provide adequate channelization.
- Obtain additional right-of-way at the intersection and obtain the necessary corner clip to allow proper right turn movement when NW South River Drive is widened to a 4-lane section in 2028.

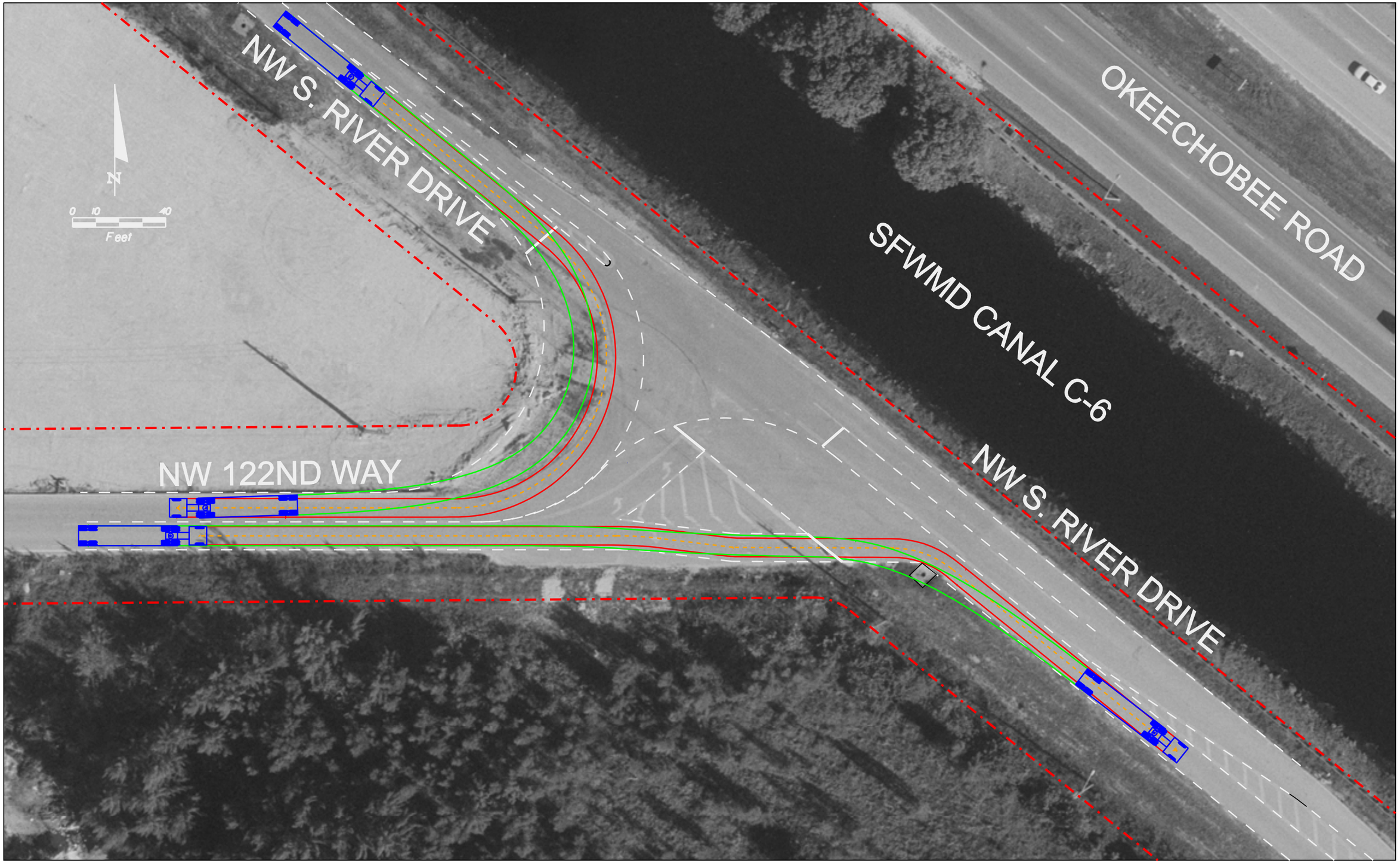


EXHIBIT 3-9
NW SOUTH RIVER DRIVE & NW 122ND WAY

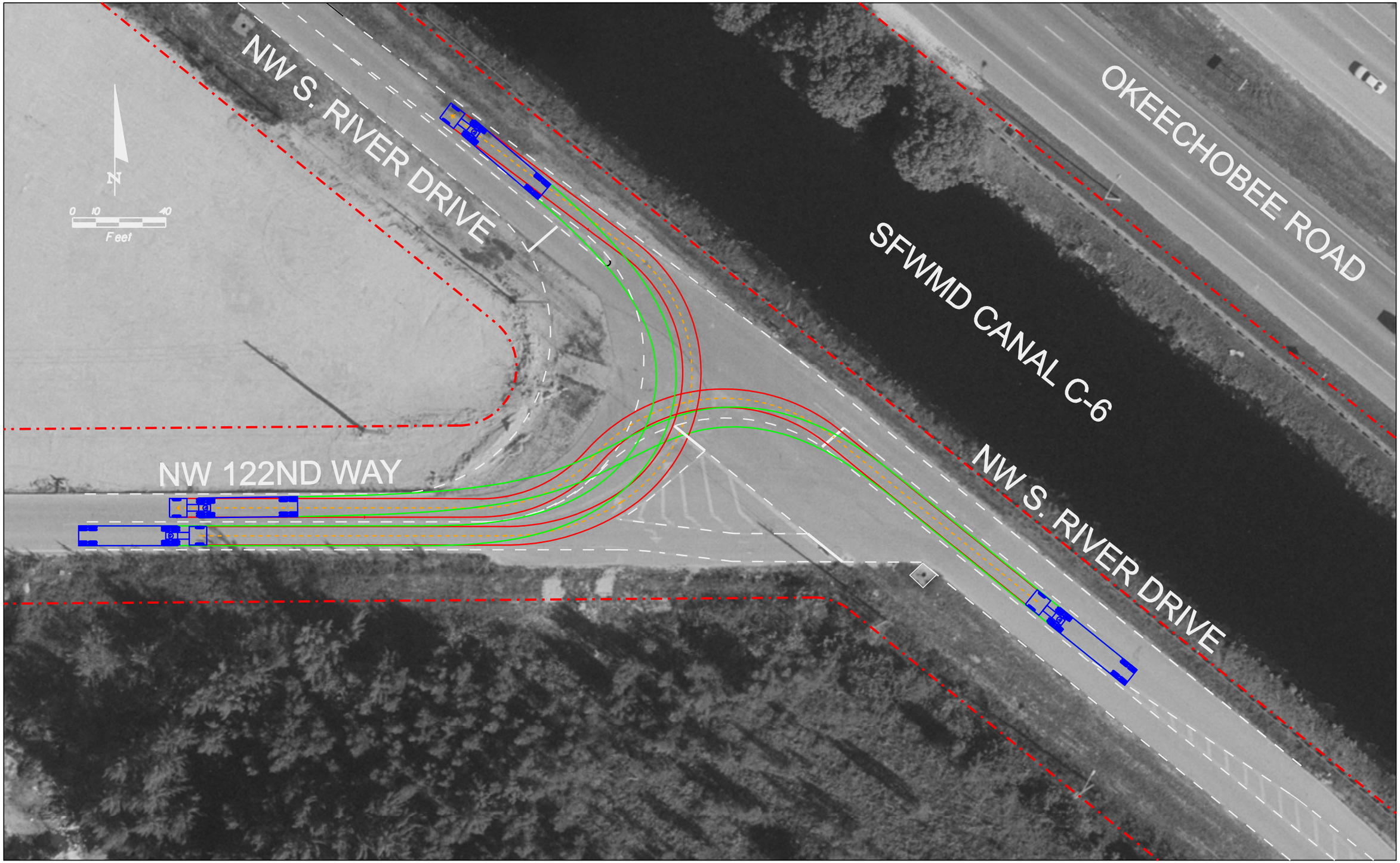


EXHIBIT 3-10
NW SOUTH RIVER DRIVE & NW 122ND WAY - LEFT TURN

3.3 Minor Intersections

3.3.1 NW 138th Street & NW 113rd Av Road

NW 113th Avenue and NW 138th Street is a 4-legged intersection with two-way stop signs placed on NW 113th Avenue. It has a two-lane approach: a left turn lane and a thru lane, and a one-lane departure at both North and South legs. Both legs of NW 138th Street have one approach lane and one departure lane. All lanes are 12-ft wide. All corners, but the NW, have curb and gutter Type E. The Rinker Material Pennsuco Plant signs (NE quadrant) and the Post Office Mail distribution box (NW quadrant), and) a Water Main & Valves adjacent to the Quest parking lot (SE quadrant) seem to be located inside the control zone. Overhead Electric lines run on the South side of NW 138th Street and the west side of NW 113th Avenue. The power poles and trees appear to comply with the clear zone requirements. The existing corner radii are approximately 30 ft. or 40 ft. At this intersection, the pavement shows some serious distress.

Right Turn Analysis:

The Auto turn analysis shown on **Exhibit 3-11** for right turns indicates that the existing intersection is not adequately designed to handle the design vehicle WB-50. For instance, a WB-50 truck wanting to make a right turn from all approaches except NW 138th Street eastbound can successfully negotiate the turn within the existing right of way. The Auto turn analysis for all the intersections was conducted under the assumption that the vehicle making the turn is centered in the lane of travel before beginning the turn. Under this scenario, all existing corner radii will need to be modified to accommodate the wide turn of the design vehicle. **A minimum of 50-ft radius or a compound curve following the path of the simulation must be provided. A right-of-way corner clip will need to be provided at the NW corner.**

Left Turn:

The left turn analysis is shown on **Exhibit 3-12**. All four left-turning movements are reflected. They were simulated with a 75-ft control radius and the gaps between opposite turning movements are acceptable. The traffic counts and field observations indicate that only two of these four movements are critical: NW 113th Avenue southbound onto NW 138th Street eastbound, and NW 138th Street westbound onto NW 113th Avenue southbound. The first movement is heavy because it moves truck traffic from the Rinker and Roadway plants onto SR-25 (Okeechobee Road) or outside the industrial area. The second movement serves as one of the major ingress point of all truck traffic to the entire Medley West Industrial Area. Very few trucks were making the other two movements at the time of our field reviews. As can be seen in this Figure, the location of the two stop bars would have to be pushed back. This is not easily done in reality. Moving stop bar locations can not be done without considering other equally important design issues; for example, intersection sight distance. Will the driver be able to see oncoming traffic to the left and right? Adequate distance must also exist from the stop bar to the existing nose of the intersection. Furthermore, movement of a stop bar does not guarantee that drivers will stop at the new location. It is important to design with driver expectancy in mind.

Recommendations

- Reconstruct the southwest bound approach of the intersection to coincide with the 5-lane section at the bridge over the Miami Canal, and widen to 3 lanes the northeast bound approach to provide left turning lane. This segment of the road is currently under design by the Miami-Dade County Public Works Department and is scheduled for completion by 2007.
- Obtain right-of-way at the intersection and evaluate provide necessary corner clips for proper right turn movements. The corner clips obtained should take into consideration the proposed widening of the NW 138th Street to a 4-lane arterial by 2028. Provision of a wider corner radius must also consider impacts to the water main at the northeast corner near Quest.
- Perform signal warrant analysis to justify the provision of a traffic signal at this intersection by 2028 due to anticipated high traffic volume along NW 138th Street.
- Synchronize the proposed traffic signal on NW 113th Avenue with the signal on SR-25 (Okeechobee Road).

RINKER

NW 113TH AVENUE

NW 138TH STREET

FREMRON

QUEST

SEQUENCE OF RIGHT TURNING MOVEMENT FROM NW 113TH AVENUE ON NW 138TH STREET

STOP

STOP

N

0 5 20

Feet

NW 138TH STREET

NW 113TH AVENUE

THE TOWN OF MEDLEY FLORIDA

EXHIBIT 3-11

NW 138TH STREET & NW 113TH AVENUE - RIGHT TURN

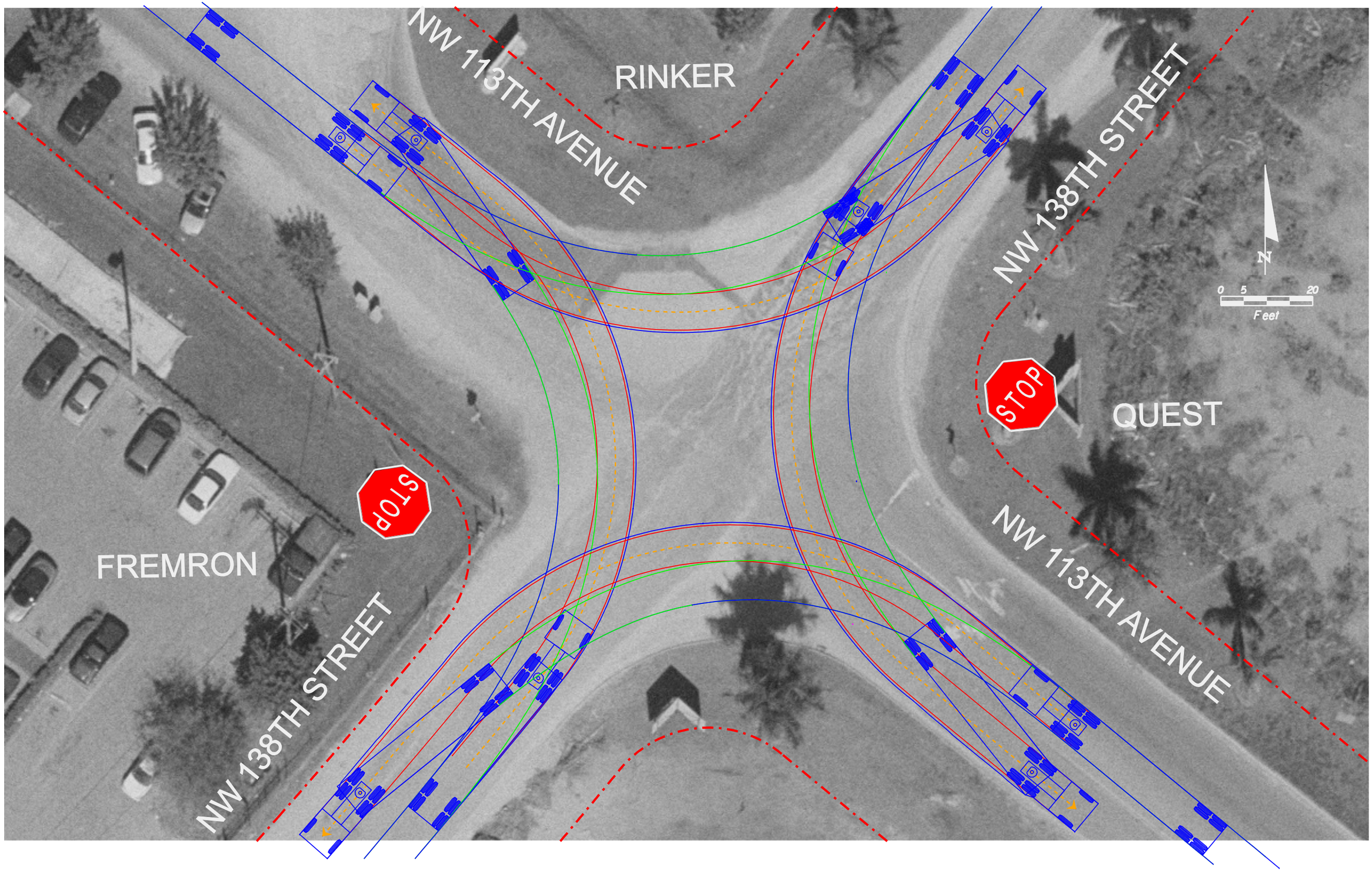


EXHIBIT 3-12
NW 138TH STREET & NW 113TH AVENUE - LEFT

3.3.2 NW 107th Avenue & NW 127th Street

NW 107th Avenue and NW 127th Street is a 4-legged intersection with two-way stop signs placed on NW 127th Street .Each leg of this intersection has a different geometry and lane configuration. For instance, NW 107 Avenue westbound leg has one approach lane and one lane departure. This segment of NW 107th Avenue is heavily traveled. It carries all the traffic that enters one of the three major ingress points (NW 107th Avenue & SR-25 (Okeechobee Road) intersection) of this portion of the Medley West Industrial Area. The other leg of NW 107th Avenue has a shared left and thru lane, and exclusive right turn lane, a wide striped island and a departure lane. This segment of NW 107th Avenue has a 6-ft sidewalk on the south side of the facility. The sidewalk is not continuous along NW 127th Street. The southbound leg of this intersection has one departure lane and two approach lanes: an exclusive right and an exclusive left lane. However, during our field reviews, we have observed many vehicles engaging in a thru maneuver despite the restriction to this movement. The other leg of NW 127th Street is a one-lane approach and a one-lane departure with no visible markings. It is not aligned with the southbound leg of NW 127th Street. All lanes are 12-ft in width. There is a curb and gutter on all corners except at the NE corner where there is guardrail.

Right Turn Analysis:

The Auto turn analysis shown on **Exhibit 3-13** for right turns indicates that the existing intersection is not adequately designed to handle the design vehicle WB-50. The predominant right turns that we have observed were made from NW 107th Avenue onto NW 127th Street. They were always in conflict with vehicles standing on the left turn lane on the southbound approach of NW 127th Street. Sometimes, these vehicles have to back up creating a serious safety issue for other vehicles in the queue. The simulation shows that this conflict can be eliminated by providing a wider radius return (wider pavement) for the right turn movement. This would entail the construction of new pavement. Although the other right turns were very light or sometimes non existent, it stands to reason to make the appropriate geometric adjustments to provide for these right turns. The simulation indicates the need for additional pavement and in some cases some right of way corner clip acquisition. The edge of pavement would have to follow the path shown in the simulation or a minimum of 50-ft radius would have to be provided for the corner returns.

Left Turn:

The left turn analysis is shown on **Exhibit 3-14**. All four left-turning movements are reflected. They were simulated with a 75-ft control radius and the gaps between opposite turning movements are acceptable. The traffic counts and field observations indicate that only the NW 127th Street westbound left onto NW 107th Avenue eastbound is critical. This movement carries a significant portion of the traffic leaving the NW 113th /115th Avenue loop to head toward SR-25 (Okeechobee Road). The simulation indicates that a turning truck would encroach on the northwest corner and on the path of truck standing at the southbound approach. In addition, a truck waiting on the left turning lane to make this movement may cause some problems for a right turning truck. Moving the stop bar back can alleviate this.

However, we have to be mindful of the other variables previously described while designing an intersection. It appears that one solution would be to widen this segment of NW 107th Avenue including the bridge. This would provide some harmonization to NW 107th Avenue which a major arterial for this area, and would make the left turns much easier. A wider segment would be consistent with the western portion. See Chapter 7 of this report for final recommendations.

Furthermore, it would also be advisable to widen the southern segment of NW 127th street. This additional pavement would allow better lane assignment/configuration.

Recommendations

- Reconstruct the southbound approach of the intersection to coincide with the 5-lane section at the bridge over the Miami Canal, and widen to 3 lanes the westbound approach to coincide with the eastbound approach by 2008
- Consider the provision of 4-way stop control for this intersection, as quickly as possible, but no latter than 2008.
- Further investigate the right-of-way at the intersection and evaluate obtaining corner clips for proper right turn movements.
- Perform signal warrant analysis to justify the provision of traffic signal at this intersection by 2028 due to anticipated high traffic volume along NW 107th Street.
- Synchronize the proposed traffic signal on NW 127th Street with the signal on SR-25 (Okeechobee Road).

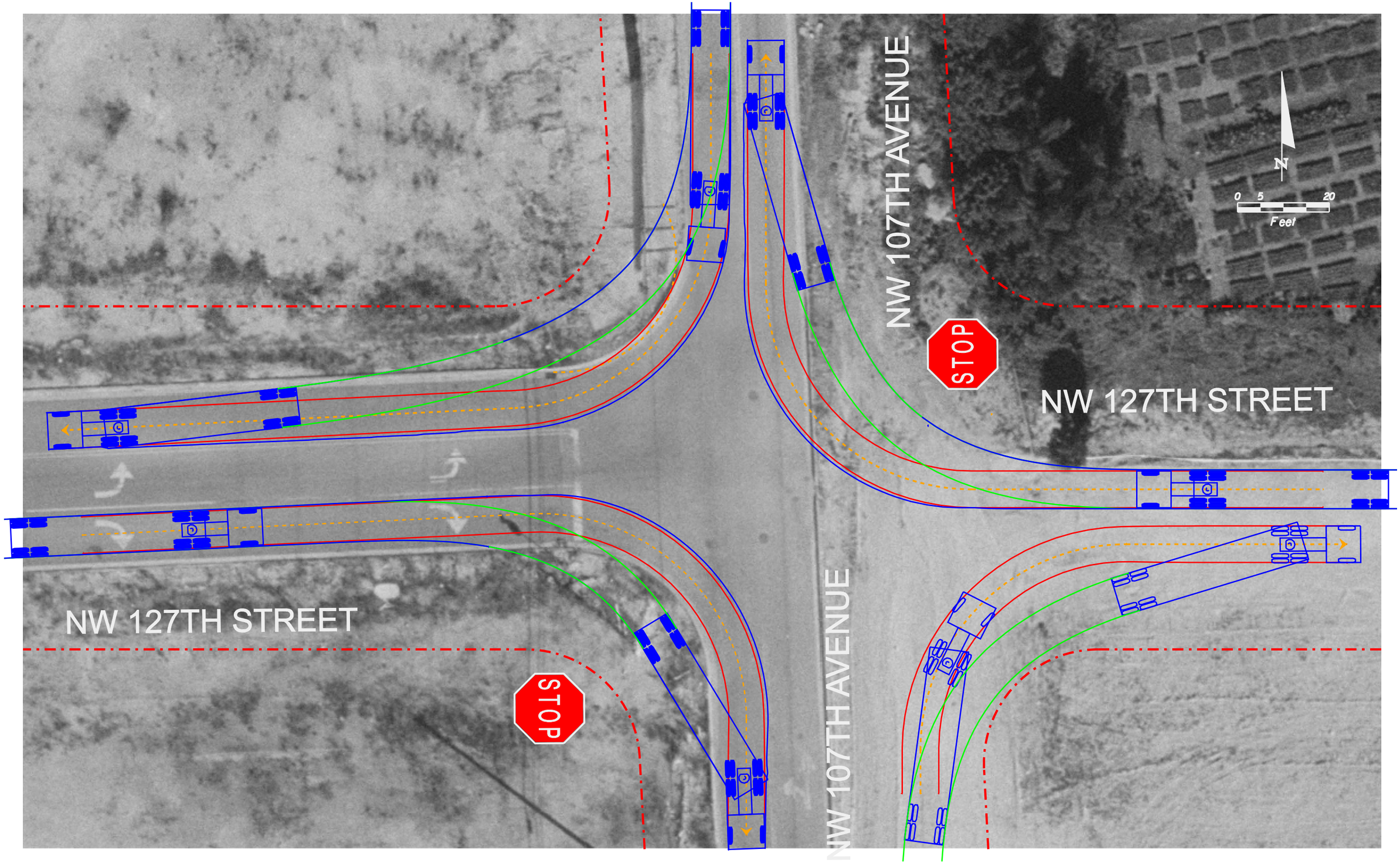


EXHIBIT 3-13
NW 107TH AVENUE & NW 127TH STREET - RIGHT TURN

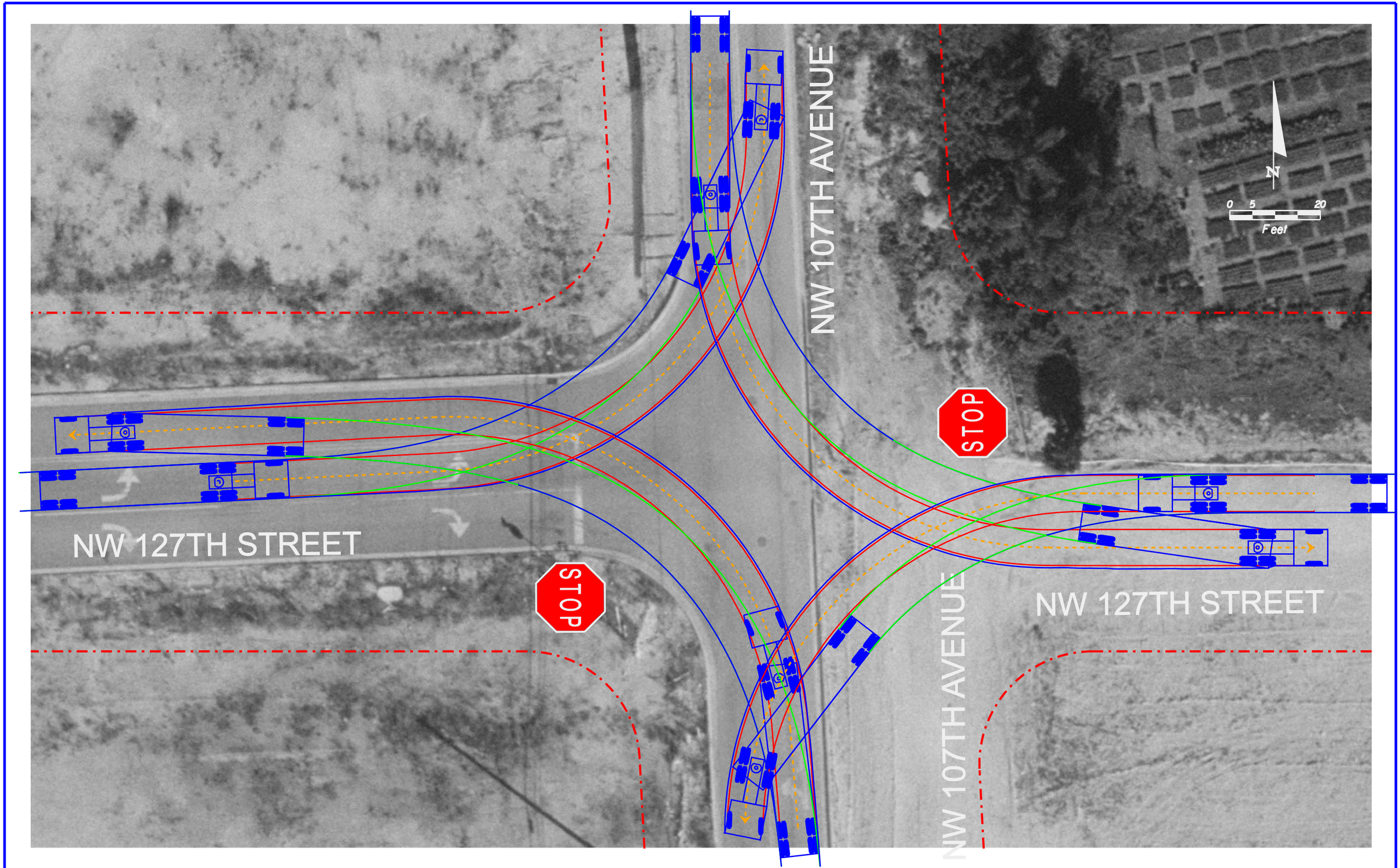


EXHIBIT 3-14
NW 107TH AVENUE & NW 127TH STREET - LEFT TURN

3.3.3 NW 107th Avenue and NW 122nd Street

To reduce impacts due to the at-grade crossing and to provide traffic solutions to the predicted increased in vehicular traffic in the Pennusco area an elevated intersection at NW 107th avenue and NW 122nd street over the Florida East Coast railroad has been proposed. The proposed roadway is in accordance with the recommendations of **NW 107th Avenue and NW 122 Street Bridge over the FEC Railroad** study completed in May 2004 prepared by C3TS for Pan American Companies (See **Appendix D**). The ultimate roadway configuration proposed by the study considers a 4-lane divided Minor Urban Arterial at NW 107th avenue and a 3-lane undivided Urban Collector at NW 122nd street. These configurations are in accordance with the Town of Medley's Roadway Jurisdiction and Classification. While the grade separation study proposed roadway typical section considers 4-lanes: two outside lanes of 12-foot and two inside lanes of 11-foot wide on NW 107th avenue and two 11-foot wide lanes which merge into three lane section at grade on NW 122nd street; further evaluation of the roadway geometry and observation of traffic pattern in the area indicates that all proposed lanes should be a minimum of 12-feet wide. Furthermore, truck turning movements at the bridge will require further widening to avoid clipping on the proposed bridge walls or encroaching into the opposite traffic lane. Turning movement's simulation done using Autoturn as shown in **Exhibit 3-15** illustrates the actual path for the design vehicle maneuvering through the curve. Wider turning radius will provide safer operation through the corridor. No additional right of way is anticipated as a result of this simulation. This analysis was performed using a 75' turning radii for vehicles entering from NW 107th Avenue and a 100' control radius for vehicles exiting through NW 107th Avenue. Gaps between opposite turning movements are acceptable.

Recommendations

- Provide for 12-ft lanes instead of the proposed 11-ft lanes on the proposed elevated bridge across the FEC railroad.
- Truck turning movements at the bridge will require further widening to avoid clipping on the proposed bridge walls or encroaching into the opposite traffic lane.
- The proposed bridge over the FEC railroad on NW 107th Avenue should be constructed with the option of future extension to the east and the south. No right of way acquisition is necessary to construct this bridge

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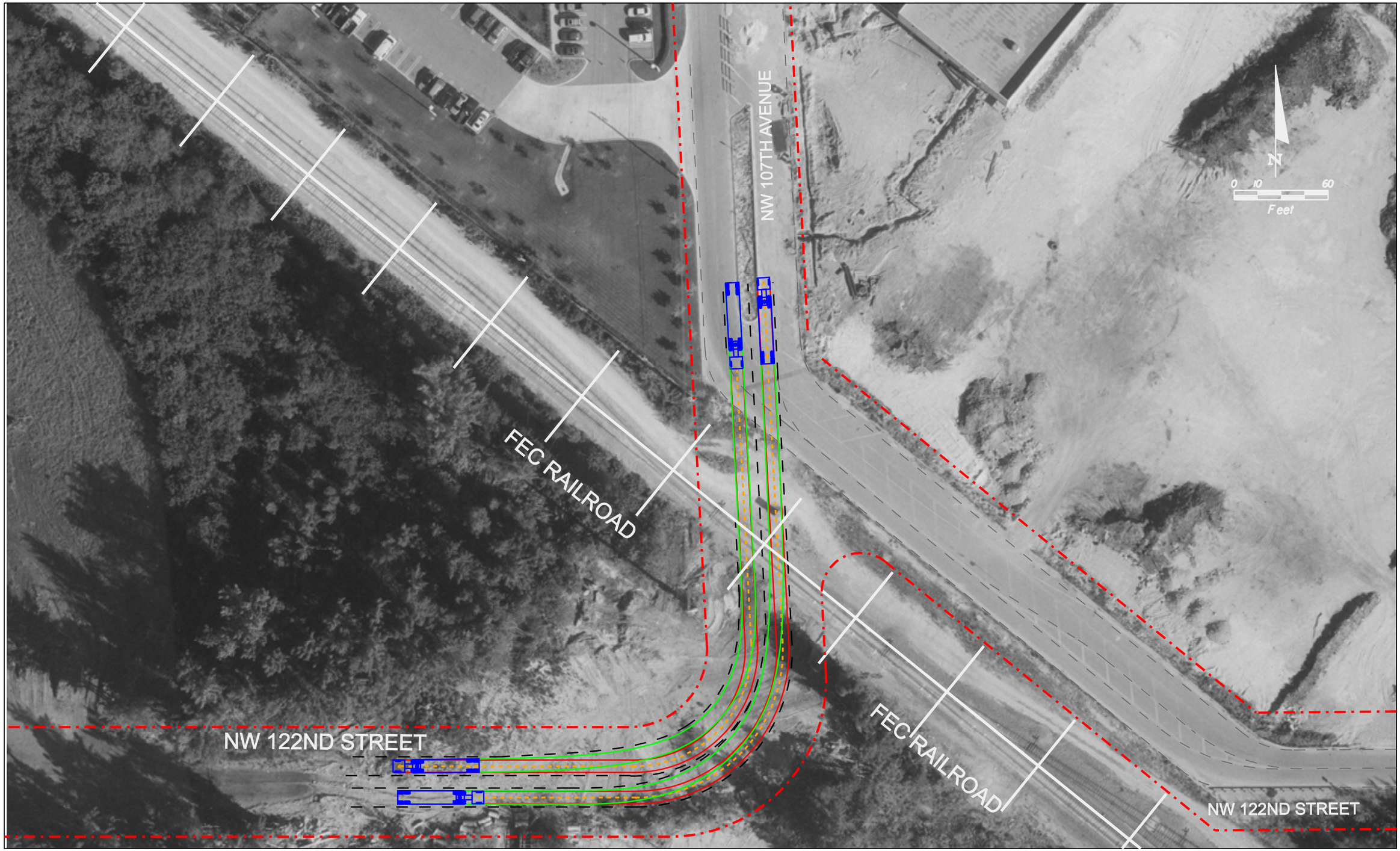

EXHIBIT 3-15

NW 107TH AVENUE & NW 122ND STREET

3.3.4 NW South River Drive and NW 127th Street

With the completion of the proposed elevated road at NW 107th Avenue and NW 122nd street over the Florida East Coast railroad, it is expected that traffic flow pattern accessing NW 122nd Street through NW 122nd Way and NW South River Drive intersection will change significantly. Unless NW 122nd Way gets incorporated with a new grade separation over the FEC railroad, the NW 122nd Way – FEC Railroad - NW 122nd Street route will be impeded. Therefore, it is anticipated that most of the traffic currently using the NW 122nd Way and NW South River Drive intersection will divert to NW 127th street and NW South River Drive to gain access to NW 122nd Street. Equally, traffic requiring access to NW South River drive approaching from NW 122nd Street will also utilize this intersection. Therefore it is recommended that this intersection be widened to accommodate the design vehicle. The controls at this intersection should be upgraded to a three-way stop given its skewness. Drivers should adequately be alert of the dead end that exists along South River Drive. The current right of way is adequate to provide the proper turning radius of the design vehicle; hence, no additional corner clip is anticipated. **Exhibits 3-16 and 3-17** displays the Autoturn simulations modeled at the intersection.

Recommendation

- Provide a minimum corner radius of 50-ft to allow right turns of the design vehicle when NW 127th is converted to a 3-lane section and NW South River Drive to a 4-lane section, by 2028.

EXHIBIT 3-16

NW SOUTH RIVER DRIVE & NW 127TH STREET - LEFT TURN

EXHIBIT 3-17

NW SOUTH RIVER DRIVE & NW 127TH STREET - RIGHT TURN

3.4 Area Transit Facilities

Miami-Dade Transit Bus Route #33 is the only bus service provided by the County within the Town of Medley. A map of the route is included in **Appendix G**. There is a lack of pedestrian and bicycle facilities throughout the study area.

3.5 Utilities

A Utility Design Ticket was obtained from Sunshine One Call to determine the extent of utility involvement within the project area. The following companies were listed as having facilities within the project area:

1. Comcast Cable
2. City of Hialeah Gardens Water and Sewer
3. Florida City Gas
4. Miami-Dade Public Works Department Traffic Division
5. Florida Power and Light
6. Level 3 communications
7. Progress Telecommunications
8. Bellsouth
9. Traffic Control Devices
10. Town of Medley Utilities Department
11. Wiltel Communications

All alternatives considered for further design should address the impacts to existing utilities and the associated costs for relocation.

3.6 Land Use

The existing land uses within the study area were quantified using aerial map coverage, the Town of Medley's Industrial area water and sewer planning parcel maps and data acquired from the Miami-Dade County Property Appraiser's office. The developed database linked parcel level data, by Parcel Identification number, to existing (2005) land use type, square footage and property acreage for all properties within the study area. Properties currently being developed were reviewed for anticipated business use, while undeveloped properties were associated with potential future uses based on parcel zoning and similar area businesses. The existing property database contained 135 parcels. Each parcel reflected in the database included in **Appendix H** was also identified by Folio Number, site address and ownership data as well. A "windshield" survey was conducted for all of the parcels to verify land use and associated development intensities. **Exhibit 3-18** shows the existing land use for the area.

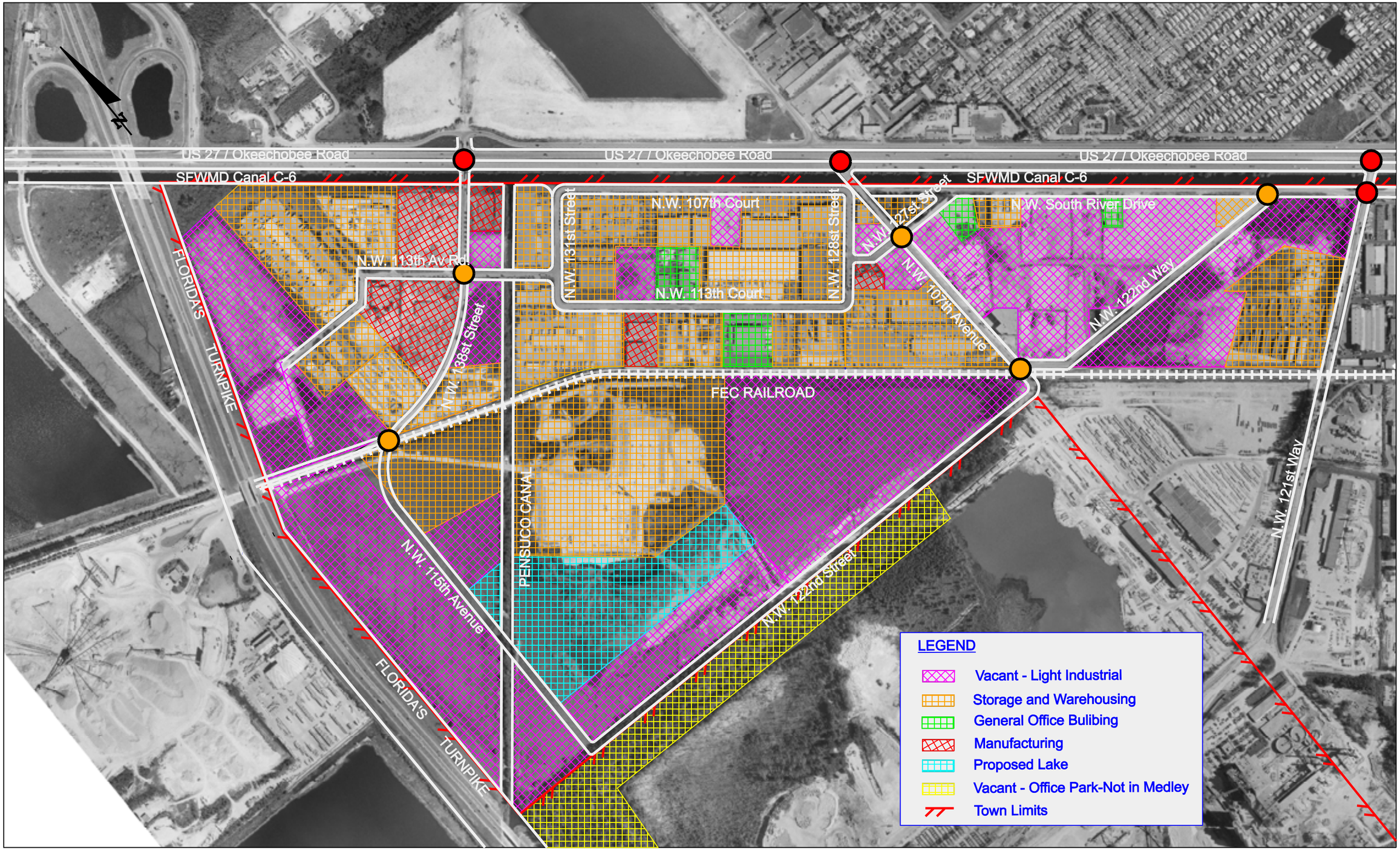

EXHIBIT 3-18

Land Use Pattern

3.7 Existing Bridge Characteristics

There are three bridges within the project limits that cross the Miami Canal: these are located at

- ✓ NW 138th Street,
- ✓ NW 107th Avenue,
- ✓ NW 121st Way.

Currently, repairs are being planned for the NW 138th Street Bridge followed by a replacement plan as part of Miami-Dade County Public Works roadway maintenance. Repairs include milling and resurfacing of the approaches. It is essential that the existing signal at SR-25 (Okeechobee Road) and NW 138th Street will be maintained during construction.

The existing connection between NW 107th Avenue and NW 122nd Street is via a temporary at grade rail crossing. A proposed elevated intersection is planned to be located at NW 107th Avenue and NW 122nd Street. (See **Appendix D**) This intersection is a vital connection to the industrial park area from the major roadways. This proposed bridge is correctly being funded by Pan American Development. The purpose of this study is to increase safety through elevation of the at grade rail crossing.

Bridge Maintenance Inspection Records for the first three bridges were obtained from FDOT. **Table 3.7-A** below lists summarizes the results of these inspection reports:

TABLE 3.7-A
EXISTING BRIDGE CHARACTERISTICS

BRIDGE AT:	NW 138th Street	NW 107th Avenue	NW 121st Way
Bridge Number	874179	874180	876300
Year Built	1970	1999	1970/1994
Type of Bridge	Pre-stressed Units	Concrete beams	Flat Slab
Pedestrian Features	4.4’ Left, 1.0’ Right	5.7’ Left, 0’ Right	5.1 ‘ Right
Number of Spans	3-slab type	3	3, max = 38.4’
Length of Bridge	108’	137.5	113.5’
Sufficiency Rating	31.5	98.1	96.6
Design Load	HS 20	HS 25	5 MS 18
Inventory Rating	34.30 tons	38.20 tons	50.38 tons
Operating Rating	57.20 tons	63.70 tons	66.58 tons
Guardrail / Barrier Condition	Sub-standard concrete beams and rails	Standard guardrail and barrier walls.	Left Concrete Barrier has moderate size cracks. Spalls on the right inside conc. Approach barrier west side.

4.0 TRANSPORTATION PLANS

4.1 Miami-Dade Long Range Transportation Plan (LRTP)

The Miami-Dade County Metropolitan Planning Organization (MPO) is responsible for developing the Long Range Transportation Plan (currently the 2030 Transportation Plan) for the urban area that specifies needed transportation projects for twenty years. The Plan includes improvements to roadways, transit, bicycle, pedestrian facilities, and greenways and trails. It also addresses and takes into consideration Intelligent Transportation Systems requirements, safety and Security planning issues and Regional Transportation Planning activities. **Table 4.1-A** shows the list of prioritized cost feasible projects within the project area.

TABLE 4.1-A
LRTP PRORITIZED COST FEASIBLE PROJECTS

Priority	Facility	Location	Activity
I	NW 74 St	From Heft To NW 87 Ave	Construct New 2 Lanes
I	NW 74 St	From NW 87 Ave. To NW 84 Ave	Construct New 4 Lanes
I	NW 107 Ave	From SR-25 (Okeechobee Road) To NW 138 St	Widen Roadway from 2 To 5 Lanes
I	NW 74 St	From Heft To NW 82 Ave	New 3-Lane (Ultimately Half Of Project 382: Widen To 6 Lanes)
I	NW 138 St Bridge	Bridge Over Miami River Canal At 138 St	Widen Bridge from 2 to 5 lanes
I	NW 87 Ave	From NW 74 St to SR-25 (Okeechobee Road)	Construct New 4-Lane Road
I	NW 87 Ave	From NW 58 St to NW 74 St	Construct New 4-Lane Road
II	NW 74 St	From SR 826 To Heft	Widen roadway from 4 to 6 Lanes
II	Okeechobee Rd	At Krome Ave, NW 138 St, NW 95 St	Construct Grade Separated Free Flow Lanes
III	NW 87 Ave	From NW 58 St to SR-25 (Okeechobee Road)	Widen To 6 Lanes
III	NW 97 Ave	From NW 58 to St NW 74 St	2 To 4 Lanes
IV	SR-25 (Okeechobee Road)	At Krome Ave, Hialeah Gardens Blvd / NW 116 Way, NW 105 Way, NW 87 Ave, And NW 79 Ave	Construct Grade Separated Intersections And Add Turn Lanes

4.2 Miami-Dade Transportation Improvement Program (TIP)

The Miami-Dade County Metropolitan Planning Organization (MPO) is also in charge of annually updating the Transportation Improvement Program (TIP). The TIP lists projects that are selected from the Transportation Plan to be implemented during a five year cycle. The 2006 TIP was reviewed for planned projects between the years 2004-2008. The following projects shown in **Table 4.2-B** were found in the project area:

TABLE 4.2-A
TIP TRANSPORTATION IMPROVEMENT PROJECTS

MPO Project No.	Facility	Location	Activity	Agency	Construction Year
DT4056153	N.W. 87th Avenue	From NW 74th Street To SR-25 (Okeechobee Road)	New Road Construction To Provide A Four (4) Lane Facility	FDOT	2008-2009
DT4147721	SR-25 (Okeechobee Road)	At NW 95th Street	Add Turn Lane(s)	FDOT	2005-2006
DT4164231	SR-25 (Okeechobee Road)	At NW 116th Way	Add Turn Lane(s)	FDOT	2005-2006
DT4164233	SR-25 (Okeechobee Road)	At NW 138th Street	Intersection (Minor)	FDOT	2006-2007
PW000326	NW 138 Street Bridge	Bridge Over Miami River Canal At NW 138 Street	Bridge Construction	MDPW	2005-2006
PS000023	NW 107 Avenue	NW 122 Street S. River Drive	Reconstruct NW 107 Ave./New Flyover Ramp	PRIVATE	N/A
PW671915A	NW 107 Avenue	SR-25 (Okeechobee Road) NW 138 Street	Widening: 2 To 5 Lanes	MDPW	N/A
PW671915B	NW 138 Street	NW 107 Avenue NW 97 Avenue	Widening: 2 To 5 Lanes	MDPW	N/A

The Town of Medley is currently in the first phase of the development of a linear park adjacent to NW South River Drive on the Miami Canal side. This segment of NW South River Drive has been slightly re-aligned. Subsequent phases construction of the linear will require further geometric re-alignment. This should be taken into consideration with any other study efforts.

5.0 CONCEPTUAL ALTERNATIVES

The following sections describe the different roadway improvement alternatives being considered, including the "No-Project" alternative.

5.1 No-Project Alternative

The No Project Alternative involves maintaining the existing facilities. The consequence associated with this alternative includes the acceptance of decreasing the LOS for this section of roadway while the traffic volume has been projected to increase as a consequence of growth.

5.1.1 Advantages

The following are advantages associated with the "No Project" alternative:

- No roadway design cost
- No ROW acquisition cost
- No construction cost
- No utility relocation cost
- No residential/business disruptions
- No social & neighborhood impacts

5.1.2 Disadvantages

The following are the disadvantages associated with the "No Project" alternative:

- Inconsistent with the plans and goals of the Town of Medley
- Significant negative impact on surrounding roadway system
- Significant delays at major intersections
- The corridor will operate at an unacceptable LOS “F” if no improvements are made
- Significant economic impact to the Town of Medley and to Miami-Dade County should businesses relocate.
- Potential increase in crash rates, safety will be compromised
- Pedestrian / bicycle facilities will not be improved.
- Congestion will result in a decrease of air quality

5.2 Transportation System Management

Transportation System Management (TSM) options provide alternate solutions to substandard roadway systems for highly urbanized areas or constrained corridors. TSM alternatives include the addition of turning lanes and traffic signalization at intersections, the addition of park and ride lots, car and van pooling and traffic signalization system coordination. Several TSM improvements were considered in the development of recommendations within the Medley West Industrial area network

The NW South River Drive corridor was studied for the implementation of any TSM options as part of the initial NW South River Drive corridor study, which could eliminate the need for widening NW South River Drive. It was determined that while initial improvements to the synchronization of signals would help alleviate the current condition, no significant capacity improvements could be gained through the implementation of a TSM scheme. Current and planned bus routes do not support the full corridor. In addition, localized intersection improvements will not maintain an adequate overall LOS. The projected traffic volumes require an increase in the total laneage to a four-lane undivided cross section.

5.3 Area Road Network Improvements

The geometric improvements in the roadway network within the Medley Industrial Area can subdivided into two categories: Intersection and arterial improvements. Under the TSM option, intersections can be geometrically modified to provide a turn lane for instance, and improve sight distance. Capacity improvements consist mainly of addition of lane along a particular arterial. They are usually long term projects and require more financial resources. Below follows a detailed discussion of all proposed improvements for all the arterials within the Medley West industrial area. **Figures 5.3-A to 5.3-O and Exhibit 5-1** depict all the proposed typical sections, the different lane assignment at all intersections and the timing for their implementation.

5.3.1 NW 138th Street

NW 138th Street is classified as an urban collector according to the Town of Medley's Roadway Jurisdictional and Classification Map of 2003. Civil Works, Inc (Miami-Dade County's Consultant) proposed a 5 lane-section for the Bridge over Miami Canal at the NW 138th Street and SR-25 (Okeechobee Road) intersection and the roadway segment that links the bridge to the east leg of the NW 138th Street / NW 113th Avenue. Five-laning this segment of NW 138th Street would significantly improve operation and safety because it provides proper channelization for the left turns. In addition, there is not enough room to construct any transition to a different typical section. **Figure 5.3-A** shows the 5-lane typical section between SR-25 (Okeechobee Road) and NW 113th Avenue Road. The

middle lane is designed to provide an exclusive left turn lane with proper taper for each intersection.

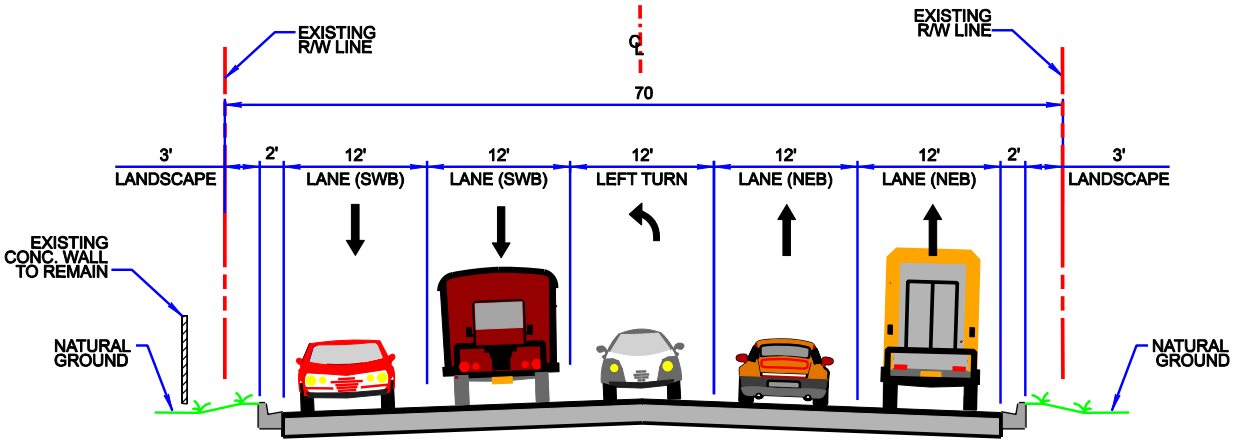

Figure 5.3-A NW 138th Street from NW 113 Avenue to SR-25 (Okeechobee Road) (2008)

A 3-lane section could be built for the remaining segment of NW 138th Street from the west leg of the intersection to the railroad tracks. This would be consistent with the existing adjoining NW 115th Avenue Furthermore, Four-lane this segment may be warranted in 2018. **Figures 5.3-B and 5.3-C** show the proposed three and four lane section respectively.

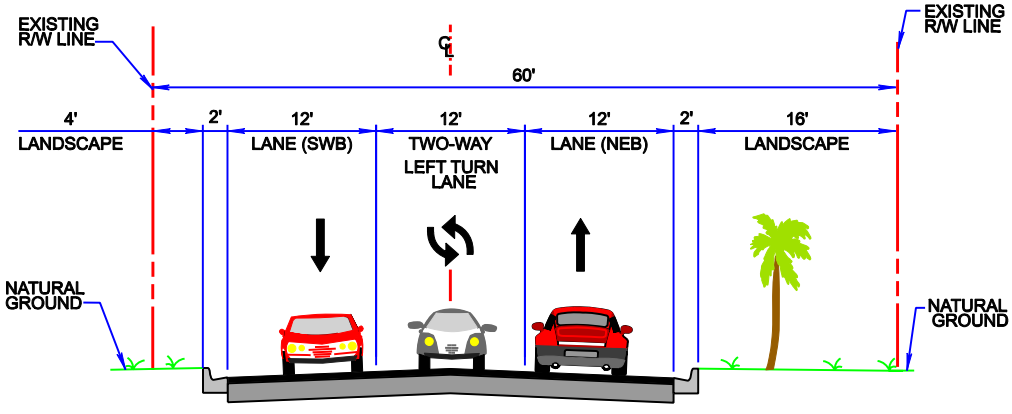

Figure 5.3-B NW 138th Street from NW 113 Avenue to FEC Railroad (2008)

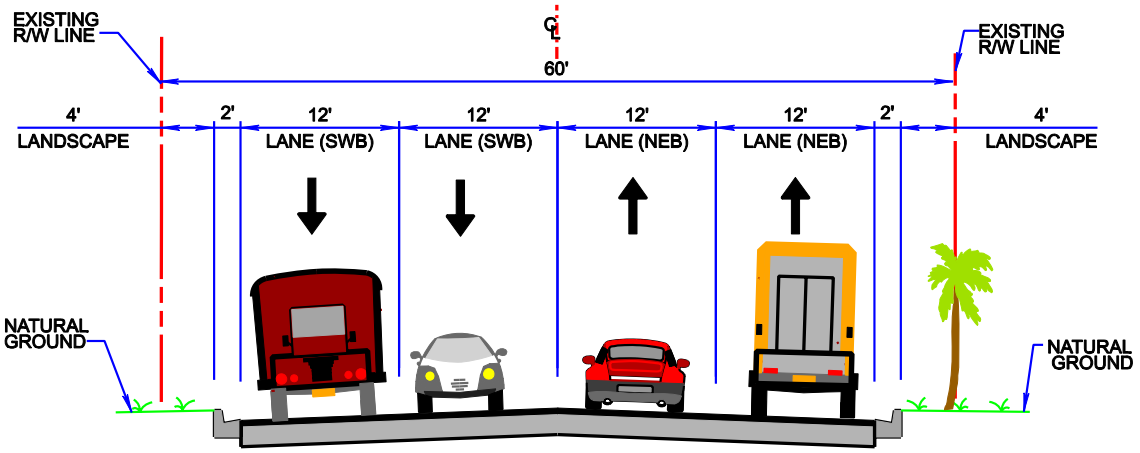

Figure 5.3-C NW 138th Street from NW 113 Avenue to FEC Railroad (2018)

5.3.2 NW 107th Avenue

The Town of Medley's Roadway Jurisdictional and Classifications Map, October 2003, indicates that NW 107th Avenue between NW 122nd Street and NW South River Drive is a minor Arterial Road. The existing typical section for this segment of NW 107th Avenue is 4-lane, curb and gutters, and a 5-ft sidewalk on the east side. NW 107th Avenue is planned to connect further south of the study limits to NW 106th Street/Gran Park. Pan American is constructing a bridge to provide an elevated connection between NW 107th Avenue and 122nd Street. This bridge shall be designed with the NW 107th Avenue extension to the south and a future connection to NW 122nd Way to the East in mind. It is recommended to build a 4-lane section on NW 107th Avenue east of NW 127th Street. **Figure 5.3-D** depicts a 4-lane typical section along NW 107th Avenue for the year 2008. It will also be the ultimate typical section for NW 107th Avenue.

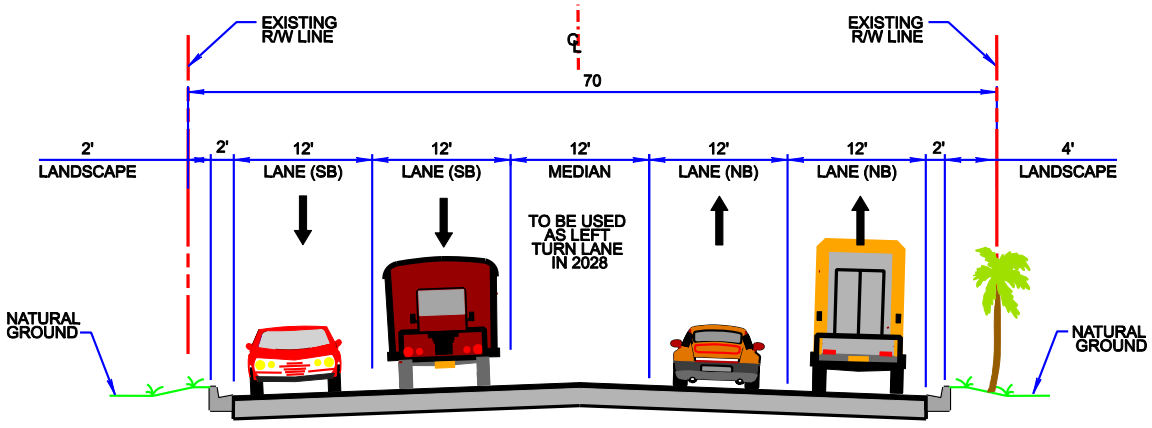

Figure 5.3-D NW 107th Avenue from 122nd Street to SR 25 (Okeechobee Road) (2008-2028)

Figure 5.3-E depicts the 4-lane typical section (looking north) for the proposed bridge over the FEC railroad to be built by Pan American Development. On the west departure this typical will transition to the proposed 4-lane section along NW 122nd Avenue. Therefore the two outside at-grade lanes within the transition can remain to serve as access roads to adjacent properties. These access roads could also be replaced by landscape if the access driveway of adjacent properties does not fall within the ramp transition.

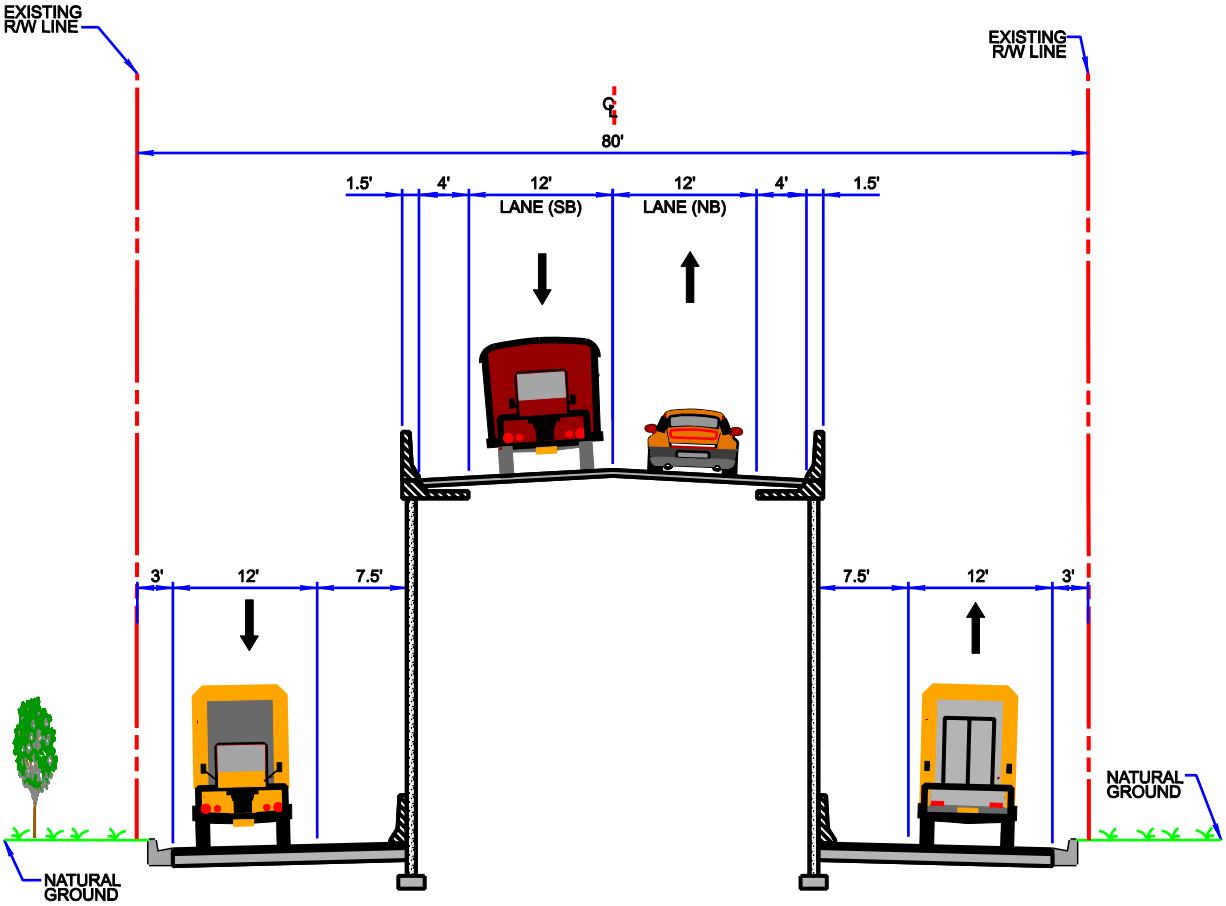

Figure 5.3-E NW 107th Avenue approach to FEC Railroad (2008)

5.3.3 NW 115th Avenue and NW 122th Street

NW 115th Avenue is classified as a 3-lane undivided urban collector according to the Town of Medley's Roadway Jurisdictional and Classification Map of 2003. This configuration currently connects to the existing 2-lane NW 138th Street through the FEC railroad tracks. This roadway typical section is able to handle traffic with an acceptable level of service for the entire study period. It will transition to the 4-lane section proposed for NW 138th St. in 2028.

5.3.4 NW 122nd Way & NW South River Drive

Both of these roadway facilities have a 2-lane section. Trucks utilize the turning lane of the other existing 3-lane section to make wide turns. The turn lane allows the trucks to make right and left turns in and out the industrial facilities without encroaching on the opposite lane. Therefore, it is recommended, if the right of way permits, to build a 3-lane section some pedestrian features. **Figures 5.3-F to 5.3-H** show the proposed typical sections for these roadway links.

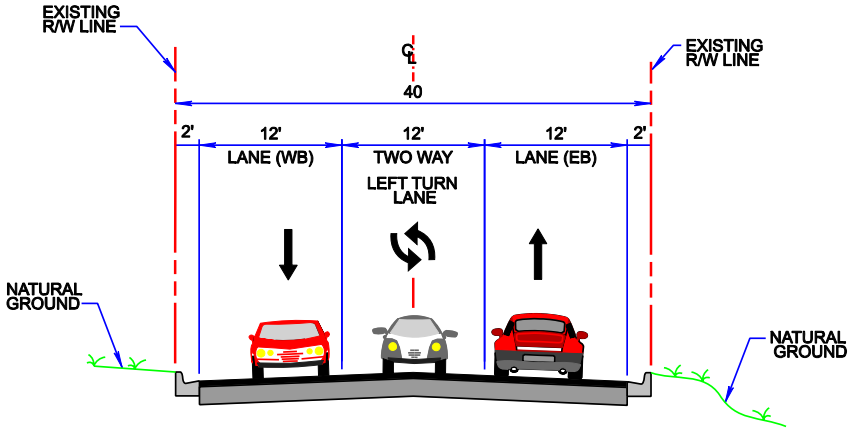

Figure 5.3-F NW 122nd Way from NW 107th Avenue to NW South River Drive (2028)

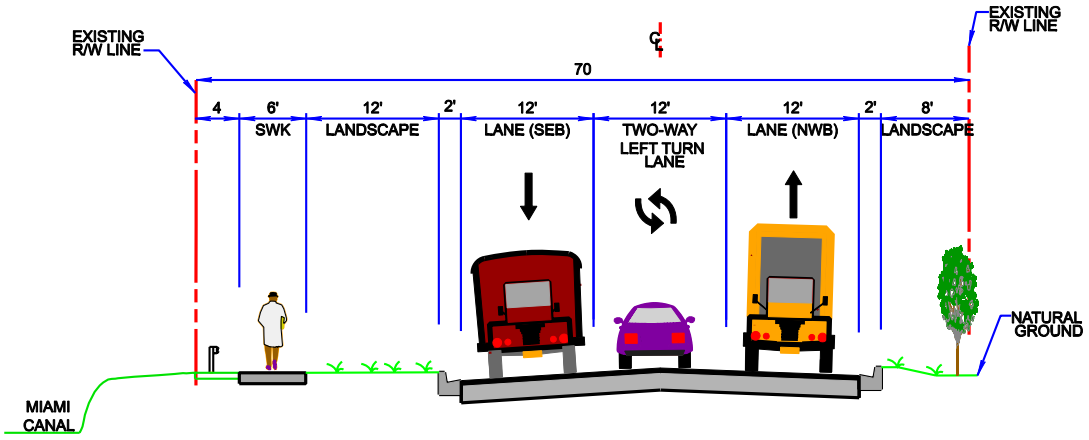

Figure 5.3-G NW South River Drive from NW 107th Avenue to NW 121st Way (2018)

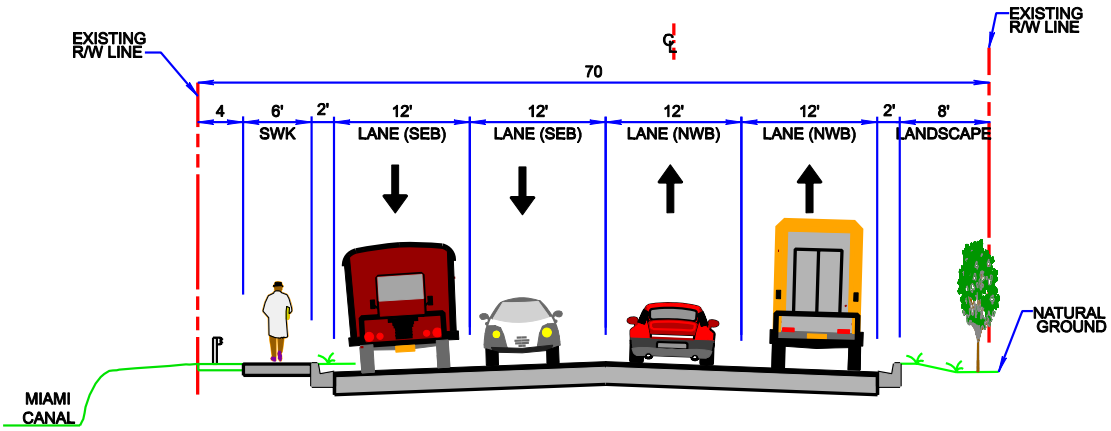

Figure 5.3-H NW South River Drive from NW 107th Avenue to NW 121st Way (2028)

5.3.5 NW 127th Street. Between NW 107th Avenue and NW South River Drive

This segment of NW 127th Street is a two-lane section road which carries traffic from NW South River Drive to the NW 113th Court/ NW 107th Court loop. Although it is a short segment, it will become an important connector if the Town of Medley decides to implement the recommendations of the Pan American Study of December 2003 to construct a bridge on NW 107th Avenue across the FEC railroad tracks. Currently, drivers traveling westbound on NW South River Drive make a left onto NW 122nd Way to reach NW 122nd Street. Under the proposal of the Pan American Study of December 2003, this route would not be available. NW 122nd Way would not be linked to NW 122nd Street. Therefore, NW 127th Street would become the best route to go from NW South River Drive to NW 122nd Street. As a result, it is advisable to build a 3-lane section for this segment of NW 127th Avenue. This would ensure a safer operation of truck traffic. **Figure 5.3-I** shows the proposed typical sections for this roadway link.

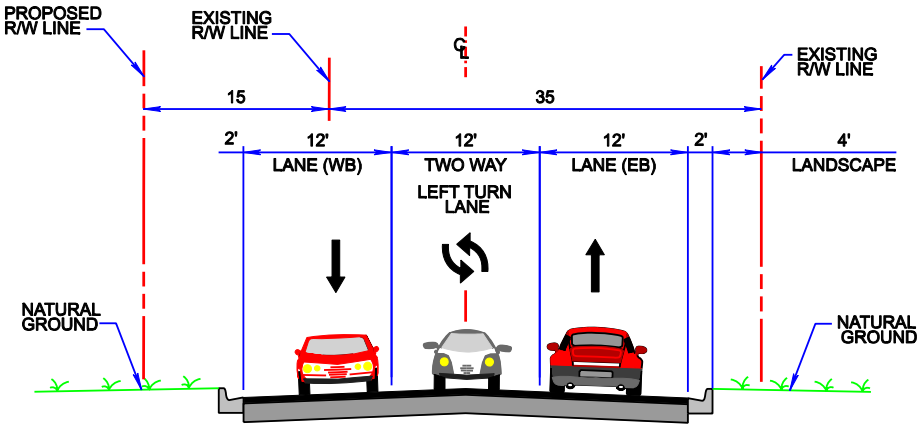

Figure 5.3-I NW 127th Street from NW 107th Avenue to NW South River Drive (2008)

5.3.6 NW 121st Way

NW 121st Way is classified as a local and private haul road according to the town of Medley Jurisdictional and Classification Map. Measurements taken during the field reviews show that the current pavement width varies from about 30 ft between the NW 121st Way/NW South River Drive intersection and FEC railroad to a wide apron near the entrance of Titan America. It appears that new construction of pavement may not be necessary; but minor widening may be enough to bring this road to the 3-lane proposed typical section for this type of facilities. **Figure 5.3-J** shows the proposed typical section for this roadway link.

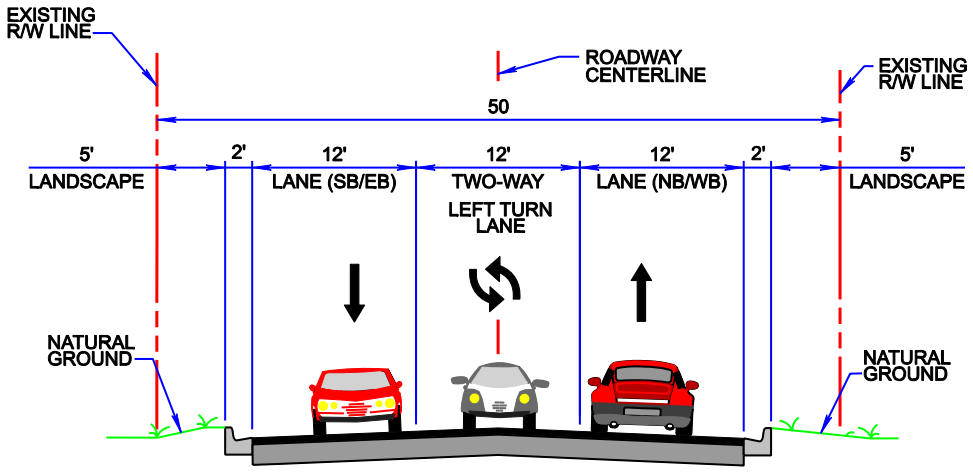

Figure 5.3-J NW 121st Way North of FEC Railroad (2018)

5.3.7 Bridge Sections Over Miami Canal

The bridge sections over the Miami Canal at NW 107th Street, NW 138th Street and NW 121st Way need to be widened to accommodate the anticipated high traffic using these bridges for access into and out of the project area.

The NW 138th Street Bridge is currently a 2-lane bridge and will be widened to A 5-lane by 2008. The design and construction for the 5-lane bridge section is currently underway by the Miami-Dade county Public Works Department and is scheduled to be completed by 2006. **From the traffic analysis, the bridge will need to be further widened to a 6-lane section by 2018, therefore it is advisable to design the bridge for the wider section now as opposed to having to do a widening later (in less than 12 years after it is constructed).**

Figures 5.3-K and 5.3-L show the proposed 5-lane and 6-lane typical section for the bridge at NW 138th Street.

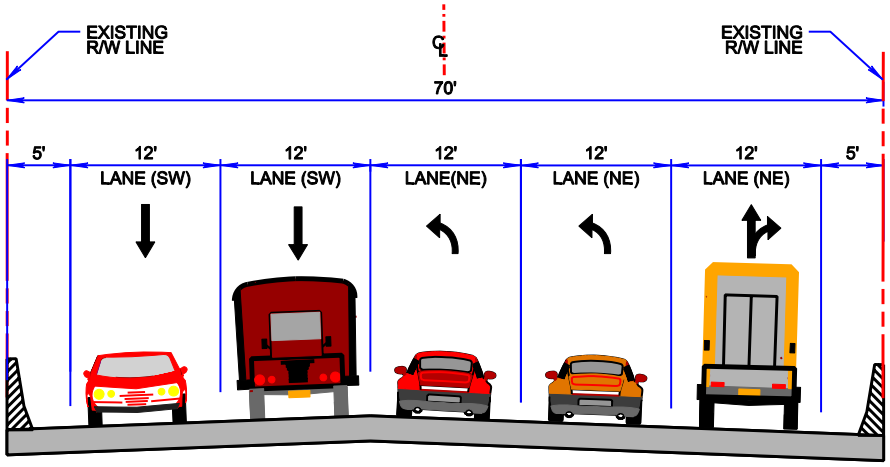

Figure 5.3-K 5-Lane Typical Bridge Section at NW 138th Street (2008)

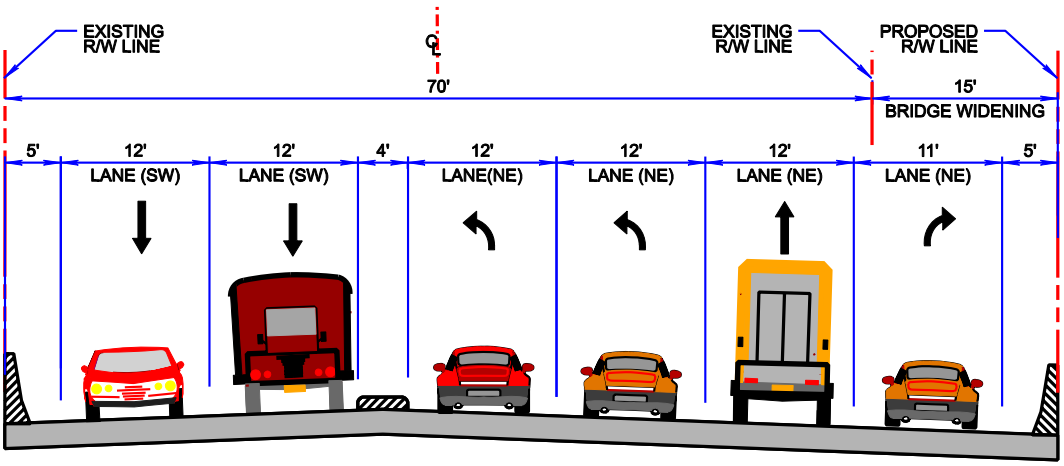

Figure 5.3-L 6-Lane Typical Bridge Section at NW 138th Street (2018)

The NW 107th Avenue Bridge is currently a 2-lane bridge. Based on the traffic projection, by 2008 this bridge needs to be widened to a 5-lane section.

The NW 121st Way Bridge is currently a 4-lane bridge, with 15ft wide lanes. By 2018 this bridge needs to be widened to a 5-lane section.

Figure 5.3-M shows the proposed 5-lane typical sections for the bridge at NW 107th Avenue and NW 121st Way.

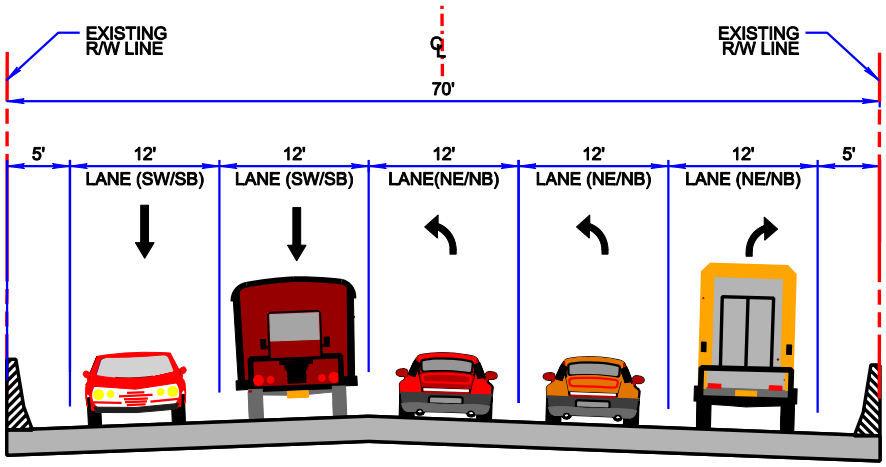

Figure 5.3-M 5-Lane Typical Bridge Section at NW 107th Avenue (2008) and NW 121st Way (2018)

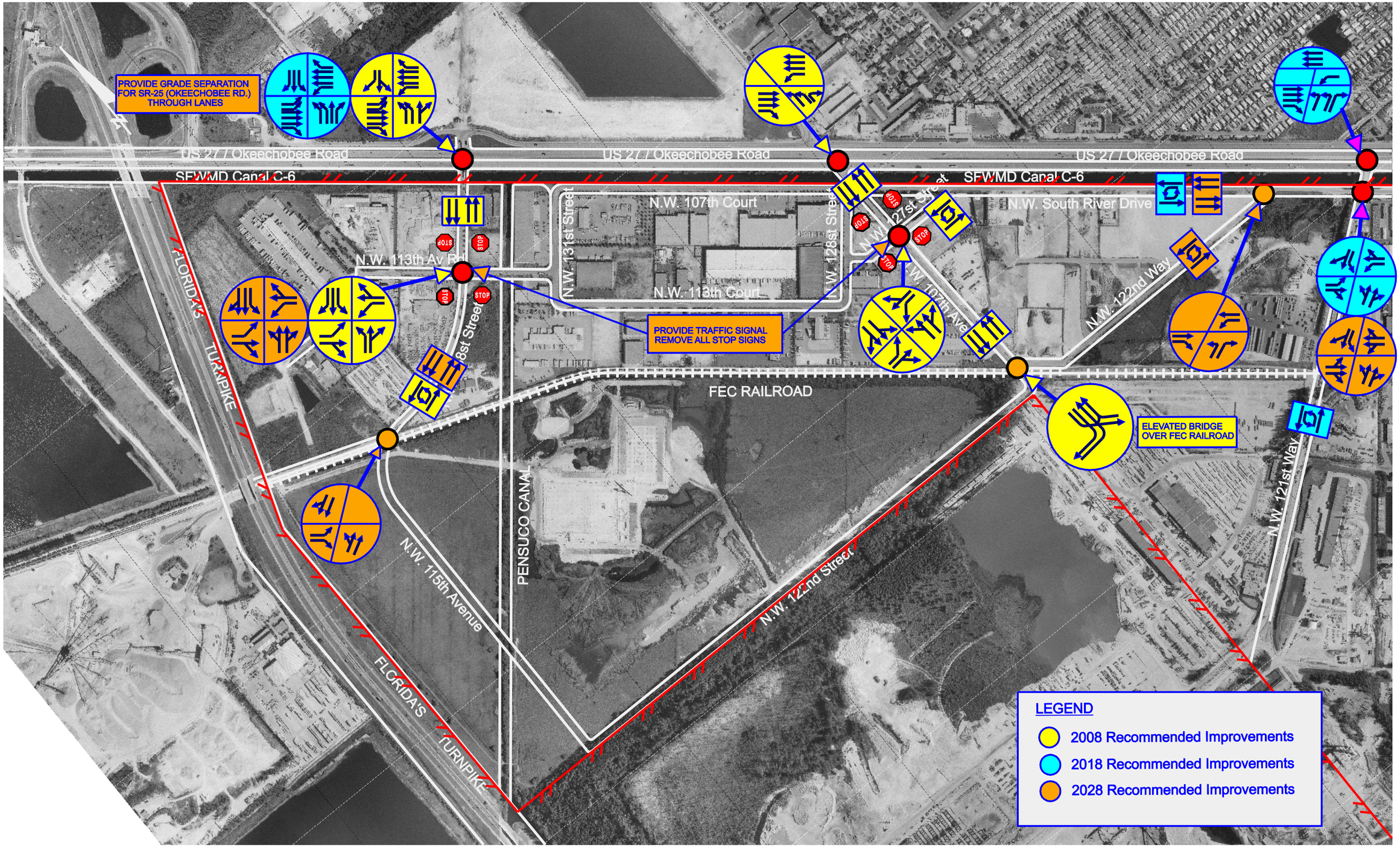

EXHIBIT 5-1

Short Term and Long Term Recommended Improvemnts

6.0 ENGINEER'S OPINION OF PROBABLE COST

6.1 Estimation of Construction Costs

Based on the recommendations and the planned phasing of the improvements, two construction activities were identified for immediate implementation (strip widening to both sides) on the road network within the Medley West Industrial Area.

1. Road widening from 2-lane section to 3-lane section
2. Reconstruction from 2 lane-section to 4-lane section

Both activities assume that the construction starts with the existing 2 lane typical section. The roadway widening activity entails adding a third lane and resurfacing the current lanes. The roadway reconstruction activity entails rebuilding completely the roadway and adding one or two lanes to the existing section. Both activities may involve improvements to the intersections along the affected roadway segments.

Tables 6.1-A and 6.2-B show a matrix of the various roadway and intersection work activities within the Medley West Industrial Area anticipated for the opening year (2008), interim year (2018) and design year (2028).

TABLE 6.1-A
SUMMARY OF ROADWAY WORK ACTIVITIES

Roadway Link	Length (ft)	ROW (sf)	2008	2018	2028
NW 138th St. from NW 113th Ave to Okeechobee Rd.	1000	-	Reconstruction	-	-
NW 138th St. from NW 113th Ave FEC Railroad	1500	-	Widening	-	Reconstruction
NW 107th Ave. from NW 127th St. to Okeechobee Rd.	850	-	Reconstruction	-	-
NW 122nd Way	2600	-	-	-	Widening
NW South River Drive	4000	-	-	Widening	Reconstruction
NW 127th Street east of NW 107th Avenue	500	7500	Widening	-	-
Bridge over Miami Canal at NW 138th Street	150	7500	Reconstruction	Widening	-
Bridge over Miami Canal at NW 107th Avenue	150	-	Widening	-	-
Bridge over Miami Canal at NW 121st Way	150	-	-	Widening	-

TABLE 6.1-B SUMMARY OF INTERSECTION WORK ACTIVITIES				
Intersection	ROW Required (SF)	Intersection Improvement Area (SF)		
		2008	2018	2028
SR-25 (Okeechobee Road) & NW 138th Street	1750	18000	22500	-
SR-25 (Okeechobee Road) & NW 107th Avenue	1400	12000	-	-
SR-25 (Okeechobee Road) & NW 121st Way	725	-	12000	-
NW 121st Way & NW South River Drive	1400	-	12000	14400
NW 138th Street & NW 113rd Av Road	1620	12000	-	14400
NW 107th Avenue & NW 127th Street	400	15600	-	-
NW South River Drive & NW 122nd Way	450	-	-	6000
NW South River Drive & NW 127th Street	0	6000	-	-

The intersection geometric improvements consist predominantly of flaring the intersection corners to allow wider right turns of the design vehicle. This will entail the addition of pavement in the R/W corner clip shown in the table above. Furthermore, pavement marking and proper signage are included in the improvement costs.

The Costs for the roadway construction activities are based on FDOT standard base costs (obtained from the Long Range Estimate unit costs 2000). To obtain the present year (2005) costs, these unit prices were escalated by 30% to account for inflation seen in the current construction costs. The unit prices for the bridge construction and widening were obtained from the 2004 Transportation Costs published by the FDOT Office of Policy Planning.

Tables 6.1-C to 6.1-E show the construction cost estimates for the various improvement phases based on the anticipated work activity shown in **Tables 6.1-A and 6.1-B**.

The construction costs estimates are expressed in 2005 present worth of costs and does not include utility relocation costs, aesthetics and/or landscaping costs. However, they include the cost of the bridge at NW 138th Street and the corresponding 5-lane roadway widening to be done by the Miami-Dade County Public Works. These works are currently under design.

TABLE 6.1-C CONSTRUCTION COST ESTIMATE FOR 2008							
	Units	Road Widening/Resurfacing			Reconstruction		
		Qty.	Unit Price	Cost	Qty.	Unit Price	Cost
Drainage	Mile	0.4	$325,000	$123,106	0.4	$702,000	$245,966
Roadway, (C&G and sidewalk)	Mile	0.4	$1,475,760	$559,000	0.4	$1,750,320	$613,275
Signing	Mile	0.4	$3,380	$1,280	0.4	$37,700	$13,209
Lighting	Mile	0.4	$141,479	$53,591	0.4	$141,479	$49,571
Signalization	Int.	0	$147,290	$0	0	$147,290	$0
Intersection Improvements (major)	SY	3066	$41	$125,567	3333	$41	$136,486
Bridge Improvements	SF	5400	$110	$594,000	10500	$168	$1,764,000
Sub Total #1				**$1,456,544**			**$2,822,508**
Mobilization		15%		$218,482	15%		$423,376
MOT		15%		$218,482	15%		$423,376
R/W Costs	SF	9120	$50	**$456,000**	3550	$50	**$177,500**
Sub Total #2				**$2,349,508**			**$3,846,760**
Engineering Design/ Inspection / R/W Support		15%		$352,426	15%		$577,014
TOTAL				**$2,701,934**			**$4,423,774**

TABLE 6.1-D CONSTRUCTION COST ESTIMATE FOR 2018							
	Units	Road Widening/Resurfacing			Reconstruction		
		Qty.	Unit Price	Cost	Qty.	Unit Price	Cost
Drainage	Mile	0.8	$325,000	$246,212	0.0	$702,000	$0
Roadway, (C&G and sidewalk)	Mile	0.8	$1,475,760	$1,118,000	0.0	$1,750,320	$0
Signing	Mile	0.8	$3,380	$2,561	0.0	$37,700	$0
Lighting	Mile	0.8	$141,479	$107,181	0.0	$141,479	$0
Signalization	Int.	0	$147,290	$0	0	$147,290	$0
Intersection Improvements (major)	SY	5166	$41	$211,554	0	$41	$0
Bridge Improvements	SF	3600	$110	$396,000	0	$165	$0
Sub Total #1				**$2,081,508**			**$0**
Mobilization		15%		$312,226	15%		$0
MOT		15%		$312,226	15%		$0
R/W Costs	SF	9625	$50	**$481,250**	0	$50	**$0**
Sub Total #2				**$3,187,210**			**$0**
Engineering Design/ Inspection / R/W Support		15%		$478,081	15%		$0
TOTAL				**$3,665,291**			**$0**

TABLE 6.1-E CONSTRUCTION COST ESTIMATE FOR 2008							
	Units	Road Widening/Resurfacing			Reconstruction		
		Qty.	Unit Price	Cost	Qty.	Unit Price	Cost
Drainage	Mile	0.5	$325,000	$160,038	1.0	$702,000	$731,250
Roadway, (C&G and sidewalk)	Mile	0.5	$1,475,760	$726,700	1.0	$1,750,320	$1,823,250
Signing	Mile	0.5	$3,380	$1,664	1.0	$37,700	$39,271
Lighting	Mile	0.5	$141,479	$69,668	1.0	$141,479	$147,374
Signalization	Int.	1	$147,290	$147,290	1	$147,290	$147,290
Intersection Improvements (major)	SY	0	$41	$0	0	$41	$0
Bridge Improvements	SF	0	$110	$0	0	$1,732,500	$0
Sub Total #1				**$1,105,360**			**$2,888,435**
Mobilization		15%		$165,804	15%		$433,265
MOT		15%		$165,804	15%		$433,265
R/W Costs	SF	450	$50	**$22,500**	0	$50	**$0**
Sub Total #2				**$1,459,468**			**$3,754,965**
Engineering Design/ Inspection / R/W Support		15%		$218,920	15%		$563,245
TOTAL				**$1,678,388**			**$4,318,210**

6.2 Needs Assessment Summary

The total transportation improvement needs for the Medley West industrial Area is estimated at **$26,098,249.** The right-of-way component of this cost is approximately **$1,137,250.** The Table below shows a breakdown of the needs assessment for the opening year, interim year and design year.

TABLE 6.2-A
NEEDS ASSESSMENT SUMMARY

Activity		Road Links	Opening Year 2008	Interim Year 2018	Design Year 2028	Total Cost
Roadway	Reconstruction (2 to 4 Lanes)	NW 138th St. from NW 113th Ave to Okeechobee Rd.	$580,282	-	-	**$3,799,653**
		NW 107th Ave. from NW 127th St. to Okeechobee Rd.	$478,226	-	-	
		NW South River Drive	-	-	$1,993,560	
		NW 138th St. from NW 113th Ave FEC Railroad.	-	-	$747,585	
	Widening (2 to 3 Lanes)	NW 138th St. from NW 113th Ave FEC Railroad.	$607,327	-	-	**$3,349,163**
		NW 127th Street east of NW 107th Avenue	$255,217	-	-	
		NW South River Drive	-	$1,528,548	-	
		NW 122nd Way	-	-	$958,070	
	Signalization	Intersections of NW 138th St. & NW 113th Ave. and NW 107th Ave. & NW 127th St.	-	-	$294,580	**$294,580**
Bridge	Reconstruction	Bridge over Miami Canal at NW 138th Street	$1,764,000	-	-	**$1,764,000**
	Widening	Bridge over Miami Canal at NW 107th Ave.	$594,000	-	-	**$1,146,959**
		Bridge over Miami Canal at NW 138th St.	-	$300,365	-	
		Bridge over Miami Canal at NW 107th Ave.	-	$252,595	-	
Sub Total #1			**$4,279,052**	**$2,081,508**	**$3,993,795**	**$10,354,355**
Mobilization (15%) and MOT (15%)			$1,283,716	$624,452	$1,198,138	$3,106,306
R/W Costs			$633,500	$481,250	$22,500	$1,137,250
Sub Total #2			**$6,196,268**	**$3,187,210**	**$5,214,433**	**$14,597,911**
Engineering Design/ Inspection / R/W Support (15%)			$929,440	$478,081	$782,165	$2,189,687
Total Cost (2005 Dollars)			**$7,125,708**	**$3,665,291**	**$5,996,598**	**$16,787,597**
Inflation Adjustment Factor*			1.102	1.525	2.110	-
Total Cost (Adjusted for future years)*			**$7,854,689**	**$5,590,011**	**$12,653,549**	**$26,098,249**

*The inflation adjustment factor was computed based on an annual inflation rate of 3.3% obtained from the FDOT 2004 Transportation costs price trend index table (See **Appendix J**)

7.0 RECOMMENDATIONS

The review of the proposed traffic impacts and access needs for the Medley West Industrial Area includes various recommendations. These recommended improvements and benefits are based on the assumption that the signals along SR-25 (Okeechobee Rd.) and those within the town boundaries will be properly synchronized. Furthermore the existing restriction of certain truck turning movements at the intersections with connections to SR-25 (Okeechobee Road) needs to be immediately addressed. The actual operational restriction resulting from the combination of large WB-40 and WB-50 trucks turning at the short bridge crossings also leads to extensive vehicular queues. The provision of four (4) lanes along the following arterials: NW 107th Avenue, NW 138th Street and NW South River Drive would dramatically increase the capacity and operation of these facilities as well as that of the intersections within the study area. In addition, future signalization coordination of NW 113th Avenue Road with NW 138th Street and NW 127th Street with NW 107th avenue intersections will greatly improve traffic flow and operations within the study area. However, due to right-of-way constraints and the availability of funding, a phasing plan for the implementation of the improvements is recommended as follows.

- ✓ **Immediate Needs**
  - o Contact Miami-Dade County Public Works Department and have them modify their bridge design on NW 138th Street (5-lane) to accommodate future needs. This structure needs to be constructed at a higher elevation than currently planned to accommodate future widening needs or widened now to meet future needs. Traffic lanes exiting the town should consist of a dual left and a shared through right. In the future a separate right turn lane exiting the town would be necessary along the bridge. See 2018 recommendations.
  - o The traffic signal at NW 107th Avenue and SR-25 (Okeechobee Road) (currently temporarily permitted) meets signal warrants 1, 2, 3 and 6. It will need to remain beyond the construction period of the current Miami-Dade Public Works project along NW 138th street. It will need to be upgraded to meet permanent signalization requirements.
  - o Confirm the availability of road right of way within the Medley West Industrial Area. Develop base maps, obtain title information and refine right of way needs for implementation of proposed improvements.
  - o Develop roadway plans and obtain permits required to allow for implementation of the 2008 improvements.
  - o Commence planning for the implementation of the 2018 and 2028 improvements including supporting Miami-Dade County and FDOT plans for improvements to the area roadways, as well as the implementation of the NW South River Drive Corridor Study requirements.

✓ **Phase I (2008):**

- Construct a 5-lane bridge section over the Miami Canal on NW 107th Avenue.
- Construct a 3-lane section for NW 138th Street from NW 113th Avenue Road to the FEC Railroad.
- Construct a 4-lane section along NW 107th Avenue from SR-25 (Okeechobee Road) to NW 127th Street.
- Convert the intersections of NW 113th Avenue Road with NW 138th Street and NW 127th Street and NW 107th avenue to 4-way stop control.
- Provide dual left turn lanes on the southeast bound approach at SR-25 (Okeechobee Road) and NW 138th Street Intersection.
- Synchronize the traffic signals along SR-25 (Okeechobee Road), at NW 138th Street and NW 107th Avenue.

✓ **Phase II (2018):**

- Construct a 3-Lane section for NW South River Dr. from NW 127th Street to NW 121st Way. Assumes that this connects to the 3-lane section constructed under the recommendations outlined in the first study for NW South River Drive.
- Widen the bridge at NW 138th Street and SR-25 (Okeechobee Road) intersection from a 5-lane section to a 6-lane section to enable the addition of an exclusive right turn lane on the northeast bound approach.
- Widen the bridge at the NW 121st Way and SR-25 (Okeechobee Road) intersection from a 4-lane section to a 5-lane section to enable the addition of an additional left turn lane on the northeast bound approach.
- Provide channelization of the right turn lane on the southwest bound approach at SR-25 (Okeechobee Road) and NW 138th Street Intersection.

✓ **Phase III (2028):**

- Expand NW 138th Street to a 4-lane section from NW 113th Avenue Road to the FEC Railroad
- Widen NW South River Drive to a 4-Lane section from NW 107th Avenue to NW 121st Way. This is consistent with the previous study.
- Provide traffic signals at NW 113th Avenue Road with NW 138th Street and NW 127th Street with NW 107th Avenue intersections.
- Support FDOT efforts to provide a Grade separation of SR-25 (Okeechobee Road) over NW 138th street. The difference from the FDOT Action plan is elevating all the through lanes on SR-25 (Okeechobee Road) through the use of a SPUI – Single Point Urban Interchange. This configuration allows for

through movements and turning movements for NW 138th Street to occur beneath the structure thus accommodating more signal green time for these movements. The SR-25 Okeechobee Road through lanes would move traffic continuously above NW 138th Street. Access ramps would be provided on either side of SR-25 Okeechobee Road (similar to an interchange) to provide access to and from NW 138th Street onto SR-25 Okeechobee Road.

- ✓ **Other Issues**
  - NW 107th Avenue is planned to be extended from 122nd Street to NW 106th Street based on the 2032 Miami Urban Area Transportation Model (MUATS). The construction of this extension is expected to transform this arterial to a major north-south connector within the project area. Miami-Dade County is in the process of developing a planning study for potential improvements for NW 107th Avenue from NW 138th Street to NW 106th street. The expansion of the NW 107th Avenue corridor will require at least a four lane facility which will affect the two-lane grade separation at the FEC railroad adjacent to NW 122nd Avenue. In addition the elevated intersection of NW 122nd Street and NW 107th Avenue will need to be expanded to incorporate NW 122nd Way. This will require a new grade separation over the FEC railroad for NW 122nd Way. The widening of NW 107th Avenue to a four lane facility will also affect the service roads at NW 122nd Street currently accessing the adjacent properties. Access to these properties will need to be addressed. These concerns should be addressed within the contents of the Miami-Dade County planning studies. In addition, the MUATS model needs to be carefully reviewed and updated in this area to provide a better reflection of the area network and trip distribution. This is beyond the scope of this current study.